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THE IMPACT OF WESTERN ECONOMIC SANCTIONS ON THE RUSSIAN BANKING SECTOR

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ABSTRACT

Economic sanctions are a common foreign policy tool used in international conflicts. Their main objective is to bring about a change in the target country through serious economic pressure. Since 2014, Russia has been suffering from a broad range of international economic sanctions by Western countries as a response to its actions in Ukraine. Sanctions against Russia have targeted sectors such as finance, energy, trade, defence and individuals' assets and travel. The purpose of this study is to examine the impact of Western economic sanctions against Russia and how sanctions have impacted the riskiness and the funding structure of the Russian banking sector.

The motivation behind this study stems from the fact that even though it has been over four years since the commissioning of sanctions against Russia and with most of the sanctions still in place, only a handful of studies have come forth investigating their impact by providing quantifiable results. To examine the impact of sanctions on the Russian banking sector, the panel fixed effects approach and the differences-in-differences approach are applied as the empirical methodologies. The research period ranges from 2011 to 2016 consisting of two distinct periods: before sanctions and during sanctions. The research data consists of micro-level balance sheet data on Russian banks. This study uses overdue loans and capital adequacy as the dependent variables to account for bank risk and household deposits and corporate deposits as well as the debt ratio as proxies for bank funding structure.

The findings of this study show that sanctions have had a significant impact on the riskiness of the Russian banking sector by deteriorating the quality of the loan portfolios of Russian banks and by increasing bank capitalisation. Furthermore, the results show that sanctions have had a significant impact on the funding structure of Russian banks by shifting the weight of corporate deposits to household deposits and by reducing debt financing. Surprisingly, however, the results are not as robust for the directly sanctioned banks as they are on the Russian banking sector as a whole.

KEYWORDS: Sanctions, Russia, banking sector, bank risk, funding structure

1. INTRODUCTION

Economic power is a force that individuals, organisations, nations and supranational actors can exploit to influence others in various ways. Every nation has at one point in time been part of an international conflict or pursuance of political coercion and war. During these situations, economic sanctions have been resorted to as a peaceful and non-violent alternative. Economic sanctions are a common choice in disputes – they run through all of history and are continuously employed as a foreign policy tool in international affairs in today's world. (Ali & Camp 1999; Simons 1999: 7)

A self-sufficient nation can be immune to an international maritime embargo or a nation with little need for international funding can be unbothered by the denial of access to international finance. However, in today's global economy it is virtually impossible that targeted and comprehensive economic sanctions would not have serious effects on the targeted country. Even if sanctions are partial or limited, sanctions can have severe economical and social effects on the target. The most crucial concern regarding sanctions is that they harm the wrong people. Sanctions not only generate significant costs to sender, but can also harm the innocent civilians of the target country by depriving them of a better quality of life. (Ali et al. 1999; Simons 1999: 7)

As a foreign policy tool economic sanctions are particularly current today as sanctions are being employed more and more as an inexpensive form of pressure. Sanctions are viewed as being politically more executable and less aggressive than a military conflict resulting in fewer human costs. Over the recent years sanctions have been imposed against North Korea as a response to the country's development of nuclear weapons, Venezuela for its violations against human rights and for the government's corruption, and against the Russian Federation for its illegal annexation of Crimea in Ukraine (Lee 2018; Obama 2015; Obama 2014). The United States (US) has been the leading nation for using economic sanctions. Approximately two-thirds of the times sanctions have been used they have been imposed by the US and three-quarters of them unilaterally. The United Nations (UN) has been another significant player imposing sanctions in order to protect human rights and to secure peace. Even though sanctions are frequently turned to as solution in international disputes, economists and scientists have largely criticized sanctions for being ineffective. It is difficult to measure the effectiveness of sanctions as it is often hard to isolate the contribution of sanctions to the outcome of the situation. (Arya 2008)

Since 2014, Russia has been suffering from a broad range of international economic sanctions by Western countries as a response to its actions in Ukraine in addition to the fall in oil prices and the collapse of the Russian ruble. Sanctions against Russia have targeted sectors such as finance, energy, trade, defence and individuals' assets and travel. Consequently, sanctions have had a severe negative impact on the Russian economy and on its trading partners. As a response to the Western sanctions, Russia responded with its own line of sanctions against the senders, which consisted of bans on exports and imports of food and other products as well as travelling. (Tuzova & Qayum 2016; Åslund 2009)

1.1. Background and motivation

The conflict between Russia and Ukraine began in late 2013 and led to a deepened crisis and eventually to bilateral economic sanctions being imposed on each other by Russia and Western countries, including all members of the euro area. The conflict has been the most prolonged and deadly in Ukraine since its independence from the Soviet Union in 1991. It began as a protest among the Ukrainian citizens against their government for abolishing the plans for closer trade ties with the European Union (EU), which spread to culminate tensions between Western nations and Russia. The conflict's origins stem from over two decades of poor governance in Ukraine, a biased economy ruled by the oligarchs, heavy dependence on Russia and a divided country between eastern and western regions in terms of religion, ethnicity and language. (Council of Foreign Relations 2014; Kholodilin & Netšunajev 2017)

In November 2013, the Ukrainian government led by the president Victor Yanukovych decided that it would not sign an Association Agreement with the European Union (Harari & Smith 2014). This decision was followed by violent protests that led to the displacement of president Yanukovich in February 2014. Not long after, the conflict erupted by Russia launching an annexation in Ukraine of the Crimean peninsula and the port city of Sevastopol. The Russian government attempted to justify its actions by appealing to protect the Russian-speakers in the country. However, the actions by Russia were considered to be difficult to justify statutorily and morally. The tensions between Russia and Ukraine escalated further and turned into a four-year-long conflict of which we have yet to see the end. (Council of Foreign Relations 2014; Goble 2016)

The actions by Russia in Ukraine were seriously condemned by Western nations and seen as a violation of the principles of world order such as sovereignty and territorial integrity. Western nations responded in two different ways to the conflict. The first policy response was the threat of a military response by NATO in case Russia conducted an attack on Ukraine. As a second policy response, the US, the EU, Japan and Canada decided to impose sanctions against Russia and to politically isolate Moscow from the international community. The first set of sanctions targeted Russian and Ukrainian government officials and businesses said to be linked to the seizure of Crimea and the escalated tensions consisting of measures such as travel bans and the freezing of assets. Later, the US and the EU announced a series of even more severe measures to block Russian banks from the US and European capital markets and generally target Russian finance, energy and defence industries. Consequently, Russia was hit by a slowdown in growth and investment. (Akbarpour & Bagheri 2016; Council of Foreign Relations 2014)

Even though it is difficult to separate the impact of sanctions from the fall in oil prices and from the drawbacks of the Russian economy, it has been estimated that Western sanctions have had a true cost on the Russian economy. According to a study by Gurvich & Prilepskiy (2015), Western sanctions have directly affected state-owned banks, oil, gas, and arms companies by restricting foreign funding. In addition, sanctions have had serious indirect effects on the Russian economy and on the non-sanctioned companies by deteriorating the companies' funding due to the decrease in foreign investment inflows and borrowing opportunities as well as lowering capital inflows into the government debt market. The indirect effects are estimated to be triple the times of the direct effects of sanctions. The estimated total negative impact of sanctions on net capital inflow is $160–170bn and losses of 2.4% on GDP by 2017 accompanied by a fall in consumption and investment.

The motivation behind this study stems from the fact that even though it has been over four years since the commissioning of Western sanctions against Russia and with most of the sanctions still in place, only a handful of studies have come forth investigating their impact by providing quantifiable results. Given the prolongation of sanctions by the US, the EU and Russia, it is important to understand their cost and thus presents a strong motivation to examine their impact on Russia. (Ankudinov, Ibragimov and Lebedev 2017; Kholodilin et al. 2017)

1.2. Purpose of the study and intended contribution

The purpose of this study is to examine the impact of Western economic sanctions against Russia and how sanctions have impacted the Russian banking sector. The objective is to provide evidence on the impact of Western sanctions on the bank risk and the funding structure of Russian banks. The time period covers years from 2011 to 2016 and is divided into the two distinct periods: before sanctions and during sanctions. The former is defined as 'during' and not 'after' sanctions as most of the sanctions are still in place.

The main focus of this study is on the so-called 'third wave' of Western sanctions against Russia, which began in July 2014, when the US and the EU announced a broad range of sanctions against Russia followed by nations such as Australia, Canada, Japan, Norway and Switzerland to announce their own line of sanctions against Russia as a response to the Ukraine conflict. The third wave of sanctions consisted of trade sanctions and sectoral sanctions, such as financial sanctions against Russian financial institutions and Russian companies as well as restrictive measures against Russian financial institutions and companies from accessing European and US capital markets. (Crozet & Hinz 2016)

Previous studies examining Western sanctions against Russia have mainly focused on their impact on the Russian stock market, on the sender countries or on Russia's trading partners. This study contributes to the existing literature and studies by presenting evidence on their impact on the Russian banking sector. This study provides valuable findings on the impact of sanctions on the riskiness and the funding structure of the Russian banking sector.

1.3. Structure of the study

The study is organized as follows. The first chapter is an introduction to the topic and the study by and large. It provides background information about the research subject in question and the motivation behind the study. The chapter also presents the purpose behind the study and the intended contribution. The second chapter presents the theoretical background behind the study. It explains the basic theories of bank risk and funding structure and presents the main determinants of the financial measures in both categories.

The third chapter consists of previous literature on economic sanctions. The chapter gives a definition on economic sanctions, discusses the different types of sanctions, such as trade sanctions, financial sanctions and political sanctions. It also presents the goals and politics behind sanctions and examines their effectiveness and the presumption of many scholars on why sanctions fail. Chapter four discusses the Western economic sanctions against Russia and the three main waves of sanctions – smart sanctions, financial sanctions and trade sanctions. The chapter also presents an overview of the Russian banking sector.

The fifth chapter of this study presents the hypotheses in more detail, the data and the methodology used to examine the effects of the Western economic sanctions on the Russian banking sector. Chapter six presents the empirical findings of the research together with the interpretation and detailed assessment of the results. The chapter is divided into two parts; the first part discusses the empirical findings on bank risk followed by the findings on bank funding structure. Finally, chapter seven presents the conclusions of this study and its findings.

2. THEORETICAL BACKGROUND

The theoretical part of this study is divided into two parts explaining basic theories and key concepts behind bank risks and bank funding structure. The chapter also presents the main determinants of the financial ratios on each category. The measures on bank risk and bank funding structure presented in this chapter are the ones commonly displayed in traditional banking literature and studies.

2.1. Bank risks

Any profit-seeking organisation, along with banks, must endure macroeconomic risks, such as inflation, economic downturns or microeconomic pressures like new competitors. Besides macroeconomic risks, banks also encounter a number of other risks unconventional for non-financial businesses, which have to be controlled for as well. Banks are commonly highly leveraged operators. This implies that they usually function with a large debt and liability base, which they produce continuously in comparison to equity and reserves. Banks are therefore sensitive and can fall, if a large debtor customer becomes insolvent or they obtain large loss trading financial instruments. According to Heffernan (2005: 101-105) the main objective of a bank is to add value to the bank's equity by maximizing the shareholders risk-adjusted return and this profitability is dependent on the bank's management of risks. (Apâtâchioae 2015; Wells 2004: 28)

Risk can be defined as an uncertain, but possible event that when materialised can result financial losses. Uncertainty about the desired outcome is the origin of risk. In relation to the financial sector as well as the banking sector, risk can be characterized as the negative volatility that is the negative deviation of net cash flows of a bank. Risks can be measured in respect to various financial products and they can materialise in any decision, function or action. Banks are financial intermediaries that provide lending; hence, credit risk meaning the risk that a borrower defaults on a bank loan is the most commonly associated risk when it comes to banking. Managing credit risk is essential, as most bank failures have been connected to a high ratio of non-performing loans. Non-performing loans are loans that are past due for at least 90 days or more (Rose and Hudgins 2008: 177). In the extreme case, risks can threaten the solvency of a bank. The key financial risks for a bank are defined in table 1. (Apâtâchioae 2015; Heffernan 2005 101-105; Wells 2004: 28)

Table 1. Key financial risks for a bank.

Financial risks	**Description**
Credit risk and counterparty risk	The risk that a borrower defaults on a loan and is unable to repay the loan accordingly
Liquidity or funding risk	The risk of insufficient liquidity for normal operating requirements, that is, the ability of the bank to meet its liabilities when they fall due
Settlement or payments risk	If one party to a deal pays money or delivers assets before receiving its own cash or assets, it is exposing itself to a potential loss
Market risk	Losses caused by unfavorable movements in interest rates, exchange rates and market prices of financial instruments held by the bank
Capital risk	The risk of the loss of part or all of an investment
Operational risk	The probability of a loss on account of inadequate internal processes, employees, systems or external events
Sovereign risk	The risk of a government defaulting on debt owed to a bank or government agency
Political risk	The state interference in the operations of a domestic or foreign firm

Source: Heffernan 2005: 102-112.

Credit risk can be viewed as the most important financial risk for banks and it is also the main focus of bank capital regulation (Scott 2005: 17). According to the Basel Committee on Banking Supervision (2000), credit risk can be defined as the potential that a bank borrower or a counterparty fails to meet its obligations with agreed terms. Thus, the most obvious source of credit risk for most banks is loans. According to Heffernan (2005: 104), when a borrower unexpectedly stops making payments or defaults on a loan, the value of the asset falls. Banks can curtail credit risk by diversifying, that is, by building a portfolio of assets with verifying degrees of credit risk (Casu, Girardone & Molyneux 2006: 259). Lower default risk assets have low

credit risk, but also lower expected return, while assets with a higher expected return have higher credit risk and probability of default. However, banks profit from taking risk, therefore, it is virtually impossible for a bank not to take risk at least to a certain extent. Traditional proxies for measuring credit risk are listed below:

(1) $$\frac{Total\ loans}{Total\ assets}$$

(2) $$\frac{Non-performing\ Loans}{Total\ Loans}$$

(3) $$\frac{Loan\ loss\ reserves}{Total\ assets}$$

(4) $$\frac{Loan\ losses}{Total\ Loans}$$

Market risk can be defined as adverse movements in interest rates, exchange rates or market prices that causes the value of instruments to decline. Market risk can be divided into general market risk and specific market risk. General market risk refers to the price volatility of all market instruments, due to for instance a change in economic policy. Specific market risk appears when the price of one instrument varies from the usual compared to other similar instruments. Market risk can materialise in instruments such as equity, commodities, currencies, debt securities and derivatives. The main types of market risks for banks are currency and interest rate risk. Currency risk is associated with unfavourable exchange rate fluctuations, which deteriorate the bank's foreign exchange investments. Interest rate risk is a form of price risk, which occurs from interest rate disparities. Important indicators of market risk in banking are listed below. (Heffernan 2005: 107-109)

(5) $$\frac{Book\ value\ of\ assets}{Estimated\ market\ value\ of\ assets}$$

(6) $$\frac{Book\ value\ of\ equity\ capital}{Market\ value\ of\ equity\ capital}$$

Another important risk that a bank faces is liquidity risk. A liquid asset can be defined as an asset that can be turned into cash quickly and without additional costs. Banks need to have enough liquid assets to be able to operate normally and meet their everyday requirements, such as loan demands, deposit withdrawals and cash requests. When the liquidity condition of a bank is strained, the bank may be unable to meet its liabilities when they mature. When liquidity risk materialises, a bank is obliged to lend emergency liquidity at a greater cost in order to manage immediate money needs. This naturally reduces its earnings. Liquidity risk can also occur from unexpectedly large deposit runs, which require the bank to lend funds at a higher interest rate. Hence, it is important to distinguish between the main two types of liquidity risk: day-to-day liquidity risk relating to everyday, foreseeable withdrawals and a liquidity crisis, which refers to unusually large and unexpected deposit withdrawals. Banks can manage their liquidity risk by keeping enough liquid assets, which means investing in short-term assets that can quickly be converted into cash. Such assets are for instance Treasury bills (T-bills) and other government securities. However, if the assets are overly liquid, it will reduce the banks' earnings. This is the trade-off between profitability and liquidity: holding highly liquid assets on the balance sheet reduces the banks' profits, therefore, the opportunity cost of keeping liquid assets is high. Liquidity risk can be measured by the following ratios (Casu et al. 2006: 264-266; Heffernan 2005: 105-206; Rose et al. 2008: 178):

(7) $$\frac{Short-term\ securities}{Total\ deposits}$$

(8) $$\frac{Total\ loans}{Total\ deposits}$$

According to the Bank of International Settlements BIS (2001) operational risk can be defined as the risk of direct or indirect losses stemming from insufficient or unsuccessful internal processes, people and systems or from external events. However, the definition of operational risk varies notably and its measurement can be challenging. Commonly, it is related to the likely failure of internal controls, systems or other administrative failures. A number of different operational risks can be identified, such as internal and external fraud, employment practices and workplace safety, damage to physical assets and business disruption and system failures. Banks are obliged to hold enough capital for the management of operational risks in addition to credit and market risk. (Casu et al. 2006: 272; Heffernan 2005: 110-111)

Banks are extremely leveraged in comparison to other businesses. Therefore, banks must hold sufficient amount of capital as a safeguard to uphold and absorb possible losses. Capital risk is the result of other risks materialising mentioned previously in this chapter, for example credit risk, market risk and liquidity risk. That is, other risks occurring can lead to the bank not having enough capital to cover such losses (Casu et al. 2006: 275). Low earnings stemming from severe loan failures or from improper risk-taking compromises the bank's capital. To make matters worse, banks that are suspected to have inadequate amount of capital have trouble in pursuing to raise more capital. Therefore, banks that take more risk should hold more capital. Capital ratios are useful tools in evaluating the stability and the solvency of banks. Common proxies for measuring capital risk are the risk-weighted and the non-risk-weighted capital adequacy ratios. A fall in these ratios may indicate increasing risks and potential capital adequacy problems. The minimum regulatory requirement by the Basel Committee of Banking Supervision (BCBS) for the risk-based capital adequacy (measured as the ratio of banks Tier 1 and Tier 2 capital to its risk-weighted assets) for banks is 8 per cent (IMF 2006). Tier 1 capital consists of paid-up shares and common stock, disclosed reserves, retained earnings and other excess funds. Tier 2 capital consists of undisclosed reserves, asset revaluation reserves, general provisions, loan loss reserves, hybrid instruments and unsecured subordinated debt. The non-risk-weighted capital adequacy ratio, also called the leverage ratio, is defined as the ratio of equity capital to total assets. The following ratios are defined below (Heffernan 2005: 109-110):

(9) $$\frac{Tier\ 1\ capital + Tier\ 2\ capital}{Risk{-}weighted\ (on\ balance\ sheet + off{-}balance\ sheet)\ assets}$$

(10) $$\frac{Equity\ capital}{Total\ assets}$$

Other risks that a bank may face are for instance legal and compliance risks, reputation risk and strategic risk. Legal risks stem from the decisions taken by the legal system that reduces earnings. Compliance risk refers to broader breaches of the legal system, such as violating rules and regulations. Reputational risk is the uncertainty related to the public opinion. Negative publicity can threaten the bank's earnings by convincing customers to use services from other institutions. Strategic risk consists of poor implementation of business decisions or lack of receptivity to industry changes. (Rose et al. 2008: 180)

2.2. Bank funding structures

Traditionally, banks operate by accumulating deposits and granting loans. Deposits have usually a shorter average maturity compared to loans. This results in a maturity imbalance that generates risks, such as the ones mentioned in the previous section. Thus, the liability management is an essential element for banks and banks have to cautiously examine various choices regarding the structure and the amount of funding, the target depositor and the optimal funding sources. Banks can seek funding from various sources, both from retail and wholesale markets. Banks' funding comes from the general public, businesses, other banks, equity issues, debt issues and from saving past profits (Casu et al. 2006: 196). Banks funds can be divided into two dominant categories: deposits placed by and owed to different customers and non-deposit funding sources such as borrowings from the money and capital markets and issuing debt securities (Rose et al. 2008: 130). (Crespi & Mascia 2018: 1-5)

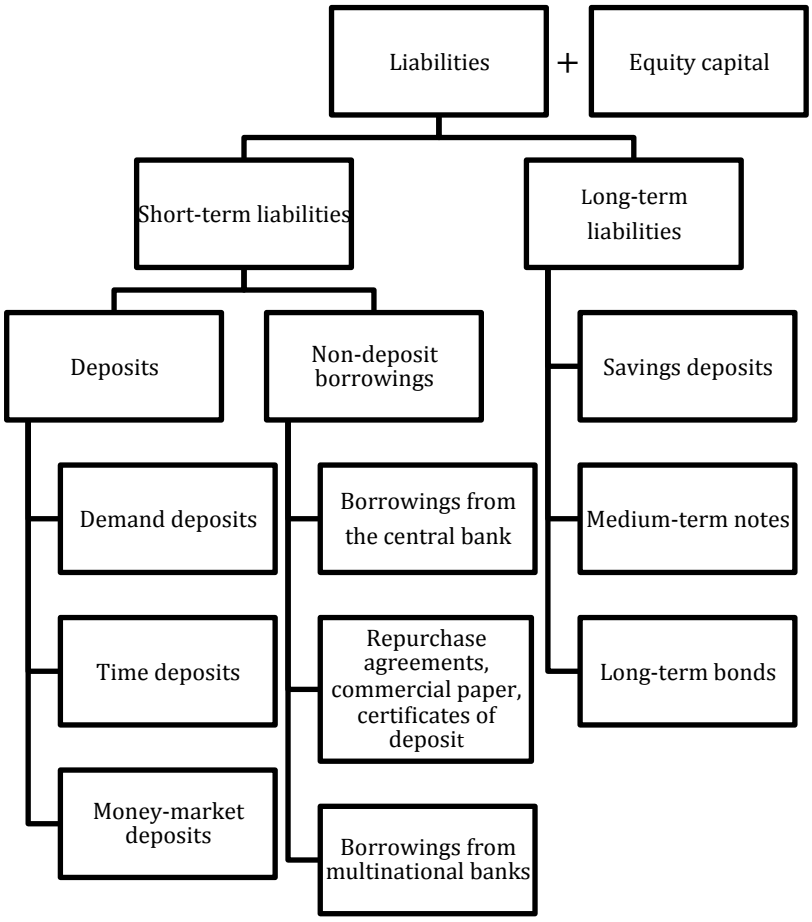

Figure 1. Funding structure of a bank.

2.2.1. Deposits

Banks rely heavily on deposits. Often, there are also limited possibilities for banks to replace them with other assets, such as equity. The leading funding source for banks is household deposits (Altunbas, Manganelli & Marques-Ibanez 2017). Household deposits are commonly short-term deposits, but households can also buy long-term debt instruments, such as bonds. In addition to household deposits, corporations and governments hold sufficient amount of deposits for transaction purposes and reserves. There are generally two types of deposits, interest bearing and non-interest bearing deposits. Non-interest bearing deposits provide the safekeeping of funds, payment services and documentation of the executed transactions without earning interest. Interest bearing deposits provide all of the above mentioned services and pay interest on the deposits as well. Deposits are an important factor in demonstrating what banks do and their significance in the economy. As deposits are an important element in generating loans, they can be seen as the fundamental source of growth and profit for banks. (Crespi et al. 2018: 4-5; Rose et al. 2008: 386-389)

Deposits can also be divided into transaction deposits, known as demand deposits and to non-transaction deposits, known as savings deposits. Demand deposits oblige banks to carry out directly any customer withdrawals or any withdrawals made by another person named by the customer to be the receiver of the withdrawn funds. Savings deposits are funds placed by customers, who choose to keep money for future expenses or in case of future financial difficulties (Rose et al. 2008: 387-389). Bank deposits are a secure funding source especially during financial crises, due to the existence of government insurance and high shifting expenses. This implies that deposits are less flexible as a funding source compared to other funding sources such as bonds, repurchase agreements and commercial paper. Deposits can however, increase the failure risk of banks, as household deposits are often volatile and their portion is significantly large in comparison to the banks' equity capital. This requires banks to be prepared to meet depositor withdrawals and carefully consider their choices of loans and other assets. Refusing to do so can endanger the stability of banks, due to the magnitude of depositors' demands. To examine how significant deposits are for the funding of banks the following ratio can be measured (Altunbas et al. 2017; Crespi et al. 2018: 29; Rose et al. 2008: 138-139):

(11) $$\frac{Deposits}{Total\ assets}$$

2.2.2. Non-deposit funding sources

Another important source of funding for banks in addition to deposits is wholesale funding, which consists of funding from private markets. Short-term wholesale funding sources consist of interbank loans, such as repurchase agreements, commercial paper and certificates of deposit. Long-term funding sources consist of issuing medium-term notes and bonds. Banks can also borrow from central banks or from multinational banks and raise capital (equity). With all other factors held constant, the larger the bank, the more it usually obtains funds from non-deposit funding sources. (Crespi et al. 2018: 4-5; Rose et al. 2008: 139)

Non-deposit funding sources, such as issuing bonds, grew substantially before the Global Financial Crisis mainly due to their low expenses. Over the recent years however, the amount of bonds as a funding source for banks has distinctly decreased in several countries. Furthermore, many European banks have shifted from wholesale funding sources to deposits and issued fewer bonds. One reason behind this shift is that the interest rates for non-deposit funds are highly volatile and if there are any doubts that a borrowing bank has financial difficulties, its borrowing costs can increase quickly. Lenders can also deny offering it any more credit. The amount of outstanding debt securities issued and their influence on bank funding can be measured by the following ratio (Crespi et al. 2018: 4-46; Rose et al. 2008: 139):

(12) $$\frac{Debt\ securities}{Total\ assets}$$

3. ECONOMIC SANCTIONS

Throughout history, political, economical, religious and financial disputes have traditionally been solved through weapons and war. Nowadays, solving differences by diplomatic and non-violent ways is the foundation in finding a mutual understanding. Hence, sanctions can be said to stand in between statements and soldiers. Economic sanctions are frequently turned to as an alternative in situations, where an armed response is unsuitable, but which requires more than a diplomatic remark. Consequently, sanctions can be used as an alternative to emphasize the severity of the issue rather than to engage with it. (Chesterman & Pouligny 2003)

Economic sanctions are resorted to in situations of international and domestic crises and armed conflicts. Conventionally, sanctions have been state and society-oriented. Nowadays, the use of sanctions has shifted towards targeting by economical and political ways those who are involved in military conflicts, threats to peace and security, terrorism, organized crime, violence and human rights violations. Imposing sanctions is heavily political as sanctions are intended to strike the centre of the political decision-making forces and to weaken the political and economical capabilities of the target. Imposing sanctions has also evolved into making them more ethically and legally justifiable. (Eriksson 2011: 1-3)

3.1. Definition

Economic sanctions can be divided into negative and positive sanctions. Negative sanctions can be defined as the economic tool of diplomacy used to cause economic harm to the target. Positive sanctions can be used to increase integration among countries (Caruso 2003). Simons (1999: 10) defines economic sanctions as actions initiated by one or more international actors (the senders) against one or others (the targets) with the aim to punish the targets by depriving them of something valuable in order to make them comply with certain norms and demands the senders deems important.

International economic pressure can be divided into economic sanctions, trade wars and economic warfare. Countries and international organisations resort to economic sanctions in order to express power or to change the target's behaviour without having to take military actions. The basis for all sanction cases is to impose some kind of a

pressure on the target and its leadership in order to make the target comply with the sender's demands and to avoid further damage. (Hartley & Sandler 2007: 869; Pape 1997)

3.2. Types of sanctions

According to Drury (2005: 11), there is no real verdict on what measures can be accepted as economic sanctions. In relation to the content, sanctions can be economical or non-economical. Non-economical sanctions are usually imposed before resulting to economic sanctions. Their aim is to convince the target to change its policy by withdrawing from multilateral meetings, abstaining from granting visas, decreasing political representativeness, disallowing the target to join international organisations and protesting the hosting of the target in international meetings. Generally, economic sanctions can be divided into the following broad classes: trade sanctions, financial sanctions, political sanctions, and to the so-called 'smart' or 'targeted' sanctions.

Simons (1999: 8) divides economic sanctions into the following classes:

1. Sanctions on arms, munitions and implements of war
2. Sanctions on imports
3. Sanctions on raw materials
4. Sanctions on technology
5. International boycott

The categories listed above show that there are various ways through which sanctions can be imposed. Sanctions can be military, for example for testing nuclear devices; they can be diplomatic, such as closing down embassies, or even cultural relating to sports and entertainment relations. The above-listed sanctions are usually considered useful coercive actions that do not harm ordinary people. Sanctions can be considered as the suspension of aid to nations that support international terrorism or travel bans on the target's citizens or leadership. Travel bans put economic pressure not only on the target's leaders, but they also decrease tourism and potential sources of significant economic activity for the target (Drury 2005: 12). The reasons behind sanctions can be straightforward, such as the protection of human rights or multifaceted, for instance to sustain global order or to protect regional and universal harmony. (Arya 2008)

A study conducted by Beladi and Oladi (2015) examines the effects of international smart sanctions, where the sender imposes sanctions on particular individuals in order to influence the behaviour of the target's government. It is presumed that the target country has oligarchs, which are powerful individuals with major influence in terms of their wealth and political power on the target's leaders. Oligarchs enhance the income and wealth of the country's leaders by providing support. Consequently, the leaders take into account oligarchs' stances when making policy decisions. In such circumstances, smart sanctions can be effective. Their study results indicate that the more likely it is that the target's leader will be replaced unless it complies with the senders demands, the more likely the leader will comply with smart sanctions.

3.2.1. Trade sanctions

Trade sanctions are one of the most common types of economic sanctions. They consist of restrictions or exclusions of exports to the target or imports from the target (Drury 2005: 11). According to Ali et al. (1999):

"*The foundation of free trade is the voluntary exchange and unrestricted movement of commodities, services and capital across borders, which generates growth and wealth.*"

Free trade improves the wellbeing and the cultural understanding by providing quality services and products. It generates more jobs and wealth and maximises production and distribution of prosperity. International economic sanctions can be partial or comprehensive. Trade sanctions are considered to be partial in the sense that they are designed to alter the target's position on a particular issue. For instance, in the case of trade sanctions against Yugoslavia, which were meant to shift the country's stance regarding the Bosnian war or the sanctions against China, which were meant to prevent it from selling weapons to Pakistan. (Ali et al. 1999)

3.2.2. Political sanctions

Previous studies on sanctions have mainly focused on economic sanctions even though political sanctions have been continuously used against troubled states. Political sanctions, also called diplomatic sanctions, can be imposed in various forms depending on their austerity and duration. Political sanctions can include the discontinuation of formal diplomatic contacts by recalling ambassadors or closing of embassies. Political sanctions can also consist of withholding the acknowledgement of a specific

administration for a certain amount of time. In today's world, political sanctions have at principal been used in situations related to terrorism, proliferation and aims towards a regime change. Political sanctions can be seen as being inexpensive even though, they can create losses in the form of losing valuable intelligence and reducing communication with the target. (Maller 2010)

3.2.3. Financial sanctions

Financial sanctions are another form of economic sanctions. Financial sanctions can be in the form of asset freezes, rejection of guarantees or loan rescheduling, restricting or suspending military development or military assistance or constraining banks and financial organisations in repealing debt and loan facilitation. In most cases, financial sanctions have been used in conjunction with trade sanctions. However, financial sanctions can be used solely as well, for example in denying or delaying loans or grants. The suspension of official development assistance is the most common form of financial sanctions, due to the majority of the sanctions cases involving a target that is a developing country. Financial sanctions can also be defined as investment sanctions in the sense that they restrict capital flows and cause disinvestment to the target (Hartley et al. 2007: 869). (Drury 2005: 11-12; Hufbauer, Schott & Elliott 2007: 94-96)

Asset freezes are an important form of targeted financial sanctions that involve the freezing of the target's assets that the sender holds. Asset freezes can also be assigned to individuals in order to avoid civilian costs. Asset freezes are often used alongside broad trade constrains and can hinder the target's trade by shutting down financial flows. Financial assets can consist of merchandise, bank accounts, accounts receivables and real property and capital. The freezing of foreign government assets have usually been done only during a military conflict or exceptional hostility. (Hufbauer et al. 2007: 96)

3.3. Objectives and politics behind sanctions

Economic sanctions can be based on a variety of objectives. The general aims behind sanctions have been to secure peace, reinforce democracy, stop human rights violations and the repression of the opposition, and protect compliance of international agreements and work towards the pursuance for prosecution of the defendants before international courts. Other important goals are to preserve international norms and structures, prevent armed conflicts, limit arms trade, pressure international rogue perpetrators and bring

suspected terrorists into justice. In addition to the above-mentioned, the rationale behind sanctions is to prevent from punishing those, who are not responsible for the targets actions. (Eriksson 2011: 2)

Chesterman et al. (2003) divided sanctions into three categories to clarify their political context. In the first category, sanctions are imposed to induce compliance with international law. This can imply the demand to change the political behaviour of the target, for instance to cease hostilities, retreat from a territory or to hand over suspects. It can also consist of encouraging the parties of the conflict to a compromise. In the second category, sanctions are imposed to restrain the conflict for instance, through an arms embargo. The last category comprises sanctions that are imposed to express fury.

3.4. Effectiveness and the economic impact of sanctions

Economic sanctions are commonly studied in terms of their effectiveness. Despite the efforts to distinguish the success or failure of sanctions, the effectiveness of sanctions as a foreign policy tool is still debatable. Depending on the austerity of sanctions, the regime, the geography and the resources of the target, sanctions can have varying effects (Caruso 2003). According to Chesterman et al. (2003), the primary questions that should be answered before one can decide if sanctions were successful are "what are sanctions intended to achieve?" and "do senders actually want sanctions to work?". According to Heine-Ellison (2001), the success or failure of sanctions has to be evaluated by examining the sanctions ability in achieving the desired political goals of the sender and comparing the domestic costs of the sanctions with the goals achieved. The success of economic sanctions can be divided into the following classes:

1. A notable part of the sender's demands were accepted by the target
2. The target changed its behaviour after sanctions were threatened or applied and
3. No other option can be used to explain the change in the target's behaviour

Sanctions literature can be divided into a negative and a positive perspective. The negative perspective consists of literature that considers sanctions to be inefficient and the positive perspective finds sanctions to be effective in achieving the desired goals. Some scholars claim that sanctions do not work, while others find that they although not entirely effectively, can have an effect on the undesirable behaviour. Some scholars

have even gone beyond and referred to sanctions as a form of "mass-destruction" due to their inability to punish those responsible. (Eriksson 2011: 10, Shen 2008)

Lacy & Niou (2004) suggest that one reason for the sanctions critique in prior studies, stems from the research methods and that most studies examining sanctions effectiveness have focused on the cases in which sanctions have actually been carried out. However, as it comes to penalties generally, sanctions too can work as a threat, but may not be as effective when implemented. As a strategy, the threat of sanctions is equally important as imposing sanctions. Based on their findings sanctions can be seen as being effective when the threat of sanctions changes the target's behaviour. Furthermore, if the target ignores the threat of sanctions, it is unlikely to change its behaviour when sanctions are being carried out.

Neuenkirch and Neumeier (2015) study the effects of sanctions imposed by the US and the UN. Their sample consisted of 68 nations and a time period from 1976 to 2012. By panel data estimation they found that sanctions implemented by the UN had a large and statistically significant effect in decreasing the per capita GDP of the target by 2.3–3.5 per cent. The results for US sanctions were considerably smaller, approximately 0.5–0.9 per cent. (Kholodilin et al. 2017)

3.4.1. Costs of sanctions

A common feature in sanctions literature is to examine the costs of sanctions. The higher the cost of the economic punishment on the target, the more likely its behaviour could change due to the resulting losses. The cost of sanctions on the target country tends to be positively correlated with the extent of closeness and dependency with the sender. Integration with the target could also harm the country imposing sanctions. In fact, the effectiveness of sanctions can be reduced by their costs to the sender depending on the size of sender's economy and its reliance on trade with the target. The sender can also loose vital imports and export markets and established economic relationships. (Caruso 2003; Heine-Ellison 2001)

The empirical evidence on the effects of economic sanctions is miscellaneous. Restrictions on trade raises costs for the target, but can also damage the sender. Nations with a strong economic bond are especially affected when their growth perspectives decreases. Caruso (2003) studied the negative effects of economic sanctions on trade. According to his findings, sanctions are more harmful when implemented multilaterally.

He also studied the impact of sanctions through the behaviour of third countries. Based on his results, multilateral sanctions are considered to be more effective as they involve many countries taking part in the coercion. Another study by Kholodilin et al. (2017) also stated that when sanctions are unilateral, the target can continue its trade with third-party countries and not be as affected by sanctions. (Caruso 2003)

The negative effects of sanctions are not only limited to the target and sender, but they affect other countries as well. For instance, sanctions are often detrimental to the target's trading partners. On the other hand, sanctions can also strengthen organised crime within the sanctioned countries and their neighbours by encouraging illegal trade and smuggling. These consequences can create resentment among third-party states towards the sender. Nevertheless, sanctions also generate profitable opportunities for the third-party states to benefit from the sanctions imposed against the target. When the sender aims to make the sanctions even more effective, it often alienates and antagonizes third-party states. The above-mentioned can also be considered as costs for imposing sanctions. (Early 2015: 8-9)

3.4.2. Effects on the sender

As mentioned in the previous section, international economic sanctions have an effect not only on the target, but also on the sender. The restrictions on cross-border interaction generate costs on the sender and its businesses and consumers. Before imposing sanctions, the sender ought to weigh the costs and the benefits of such measures in relation to the costs and benefits of other alternatives, such as economic incentives, military action and diplomatic isolation. The success of sanctions depends on the relative costs it imposes to the target and the sender. (Farmer 2000)

As a retaliatory measure, the target's citizens may unite with its government and protest against the sender. As one of the most severe retaliatory measures, the target can engage in military actions against the sender. A military conflict can be significantly costly in a situation, where the costs for a military victory are high and where the target may defeat the sender through an armed conflict. (Heine-Ellison 2001)

3.5. Why do sanctions fail?

Why do economic sanctions fail so often? Even though, sanctions are frequently turned to as a form of coercion in international disputes, most studies find that sanctions often do not meet their objectives. Hence, it is justified to raise the question: why are economic sanctions so commonly used, when they are likely to fail? (Lacy et al. 2004)

A common way in which sanctions seem to fail is by the target country adopting policy changes that mitigate the economic costs imposed by sanctions. Often, the target will engage in smuggling, develop conservation strategies, expand to new business areas for its products and establish substitutes for restricted goods. Another explanation for sanctions ineffectiveness is third party states that play a significant role in sanctions failure. The third-party states that are not responsible for imposing sanctions can easily undermine their effectiveness (Early 2015: 9). (Blanchard & Ripsam 1999)

According to Hufbauer et al. (2007: 7-8), sanctions are rarely able to change the behaviour of the target country. Based on their results, sanctions seemed to mostly fail and optimistically interpreted, sanctions were successful in approximately one-third of the cases. Another study by Pape (1997), found that sanctions were successful in at most 5% of the sanctions cases. A simple explanation to sanctions ineffectiveness is that they are unfit for their task. The goals can be too difficult to achieve, the means can be too weak or the assistance from other nations may be too subdued. Another important factor behind the failure is that sanctions can create their own countermeasures. Sanctions can strengthen the target's nation and bring its citizens closer together in supporting its government and in finding other business alternatives. The support of the target's wealthy and powerful allies can also weaken the effects of sanctions in a way that the target can compensate or circumvent the deprivation. Another reason is that the measures taken by the sender can distance its allies and damage business and investment interests with the sender. Despite all the criticism, many still believe that economic sanctions are the correct solution in international disputes (Arya 2008).

4. WESTERN SANCTIONS AGAINST RUSSIA

The origin of Western sanctions against the Russian Federation and the counter-sanctions carried out by Russia is the conflict in eastern Ukraine and Crimea. The events that led to the commissioning of sanctions can be divided into three periods. During the first period, categorized as the 'conflict', tensions began to grow in Ukraine from December 2013 until February 2014. After the illegal annexation of Crimea in March 2014 by Russia, the first set of sanctions, also defined as 'smart sanctions', were initiated against the Russian Federation by the US and the EU. The third period consisted of even more severe and broad range of sanctions by Western countries targeting key sectors of the Russian economy. Consequently, Russia retaliated with its own line of counter-sanctions against the sanctioning countries. (Ashford 2016; Crozet et al. 2016)

The countries that have imposed sanctions or similar policies against Russia as a response to the Ukraine conflict are the US, all of the EU member states, Australia, Albania, Canada, Norway, Georgia, Montenegro, Ukraine, Moldavia, New Zealand and Japan. The timing of the implementation of sanctions and restrictions differs between countries, but all of the above-mentioned states conducted such measures by the end of August 2014. Even Switzerland, commonly considered politically neutral, passed a law to make it more challenging for Russia to circumvent sanctions. Figure 2 shows the countries that have imposed sanctions against Russia or have been exposed to Russian counter-sanctions. Economically, these countries made up a total of 55.2% of the world's GDP in 2014. (Crozet et al. 2016)

Many European corporations, specifically the ones that had strong business ties with Russia called for the sanctions to be lifted, due to the fear that sanctions would have a negative impact on their businesses. Their fears were justifiable, as 25 out of the 28 EU member states experienced falls in exports after the imposition of sanctions in 2014. According to the United Nations Comtrade database, exports from EU countries to Russia fell by 14% in 2014. The fall in exports was particularly substantial for Malta with -78%, Cyprus -42% and Belgium -27%. Major EU economies, such as Germany and the United Kingdom (UK), suffered also major losses in exports by approximately -18%. France and Italy experienced losses in exports of -12%. In 2015, exports fell even more. UK's exports to Russia fell by 51% from 2013 until 2015 and the exports from Germany fell by 30% after 2014. (Kholodilin et al. 2017)

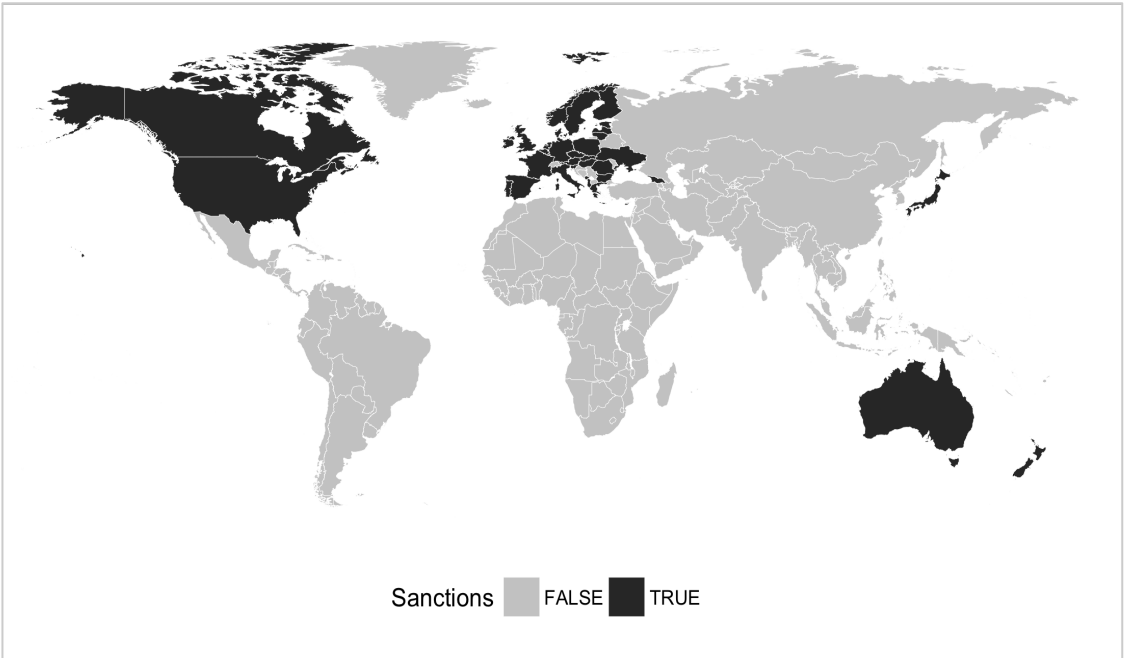

Figure 2. Countries that have imposed sanctions against Russia and that have been subject to Russian counter-sanctions. (Source: Crozet et al. 2016)

After the imposition of sanctions the Russian ruble fell by 76% against the US dollar and inflation rose in Russia to 17% in 2015. During the same year, the GDP of Russia contracted by 2.8%. Thus, the sanctions against Russia seem to be effective. Ashford (2016) however, presents justifiable critique against the Western sanctions and arguments to why sanctions have failed. First, the imposition of Western sanctions coincided with the fall in global oil prices, which contributed to the worsening of Russia's economic state as well as the collapse of the ruble. In addition, the Russian government has been able to endure the situation by implementing different policy measures to support the economy and the financial sector. The targeted sanctions appear not to cause pain on Russia's elites let alone pressure them to use their influence to convince the government to reconsider its actions. Despite the measures taken by the sanctioning countries to prevent Russia from circumventing sanctions, the Kremlin has been able to circumvent sanctions somewhat by turning to China and the Middle East. Furthermore, sanctions have had the unintentional consequence of punishing the Russian citizens and inflicting serious nemesis on the Russian economy. Most importantly, sanctions have failed to achieve its main goal – a policy change in Russia with Russia not withdrawing from Ukraine. (Ashford 2016; World Bank 2016)

4.1. First two waves of Western sanctions

Before the Ukraine conflict, the relationship between Western countries and Russia in terms of international trade and financial ties were tight. As the tensions grew further in southeastern Ukraine, especially on the Crimean peninsula, on February 27, 2014 armed men and protesters took by force key government buildings and the main airport. Not long after on March 16, 2014 a highly condemned referendum was organized that indented to merge Crimea into the Russian Federation. At the same time, the US and the EU launched the first wave of sanctions, also defined as 'targeted sanctions' or 'smart sanctions' against Russian and Ukrainian individuals and institutions involved in the conflict. A second wave of sanctions followed a few weeks later in April, which extended the amount of individuals and entities targeted by sanctions. (Crozet et al. 2016; Dreyer & Luengo-Cabrera 2015; Kholodilin et al. 2017)

4.1.1. Smart sanctions

Smart sanctions consist of sanctions on powerful individuals of the target. Their aim is to pressure these individuals to use their power to change the behaviour of the target's leadership. Smart sanctions are essentially disparate from the traditional nationwide sanctions. Smart sanctions were the first initial wave of the Ukraine conflict related Western sanctions imposed against Russia by the EU and the US in March 2014. They focused on targeting political and military officials, members of Russia's leadership's inner circle and certain individuals and entities responsible for offending the sovereignty and the territorial integrity of Ukraine. (Beladi et al. 2015; European Council 2018; US Department of State 2018a)

During the first sanctions wave the US ordered asset freezes and travel bans against individuals and entities including a major Russian financial institution that had close ties with Kremlin. The first wave targeted Bank Rossiya, the personal bank for senior officials of the Russian Federation, which assets were frozen amounting to $572 million. In addition, any activities by US persons or within the US concerning the sanctioned individuals and Bank Rossiya were forbidden. The EU also imposed smart sanctions, which consisted of asset freezes and travel bans against Russian and Ukrainian officials and institutions due to their actions in the Ukraine conflict. Other EU and US allies adopted similar measures during the spring and summer that year. (Ashford 2016; Crozet et al. 2016; European Council 2018; US Department of State 2018a)

The actions taken by Western countries were seriously condemned by the Russian Federation and in March 2014, The Russian Ministry of Foreign Affairs imposed travel bans on dominant and eminent US government officials and Canadian politicians and government officials. In May 2015, the Russian counter-sanctions list was expanded to target 89 politicians and activists from EU member states (Crozet et al. 2016). The lists of individuals sanctioned by the EU and the US and other Western countries have been amended and extended several times, last in May 2018. Currently, the smart sanctions imposed by the EU are targeted against over 160 Russian and Ukrainian individuals and over 40 entities being subject to asset freezes and travel bans due to their actions undermining Ukraine's territorial integrity, sovereignty and independence. The EU's sanctions list was last extended in May 2018 and will be held in place until September 15, 2018 and for some individuals until March 2019. The Ukraine related sanctions by the US are targeted currently against 211 individuals and 151 entities and will be held in place until March 2019. (European Council 2018; OFAC 2018; Trump 2018)

4.2. Third wave of Western sanctions

The third wave of Western sanctions against Russia went beyond previous measures in terms of depth and immensity. In July 2014, the US and the EU imposed new sanctions targeting particular sectors of the Russian economy as well as trade sanctions and expanded the existing financial restrictions even further. The sectoral sanctions were targeted directly at certain Russian industries such as banking, energy and defence sectors. In addition, Western countries imposed diplomatic sanctions against Russia by cancelling regular EU-Russia summits and bilateral discussions on visa matters. Russia was also suspended from the G8 meetings, which have since then been held without Russia. Negotiations with Russia on joining the Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA) were also frozen. Russia responded with expanding its counter-sanctions against the sanctioning countries and banned food and agricultural imports from the US, the EU, Canada and Australia. (Crozet et al. 2016; Dreger, Fidrmuc, Kholodilin & Ulbricht 2016; European Council 2018)

4.2.1. Financial sanctions

Western financial sanctions have had the most distinguishable impact on the Russian economy. The financial sanctions against Russia have consisted of restricting foreign

funding for Russian banks, imposing sanctions directly against certain Russian financial institutions, forbidding foreign exchange payments and imposing bans on borrowing. In July 2014, the US expanded the financial restrictions by prohibiting US citizens from operating with or providing financing for, or in any other way dealing with new debt of longer than 90 days maturity or new equity for two major Russian banks, Gazprombank and VEB, and two publicly owned energy firms, Novatek and Rosneft. Similar measures were imposed against eight defence technology entities limiting their access to US capital markets. The US also suspended its credit and development aid to Russia. Soon after, these measures were extended to state-owned banks, energy firms and companies, such Bank of Moscow, Russian Agricultural Bank, VTB Bank and eventually to Sberbank[1]. Financial sanctions were also extended to several Russian private banks and companies restricting them from foreign exchange payments to, or on behalf of their clients. (Crozet et al. 2016; European Council 2018; OFAC 2018; Orlova 2016; US Department of State 2018a)

The directly targeted banks by the US sanctions are among the largest in Russia in terms of net assets. In September 2014, the US announced further amendments to the existing measures, tightening the debt financing restrictions by reducing the maturity period for new debt issued by the six Russian banks from 90 days to 30 days. In September 2017, the US tightened financial sector sanctions again by prohibiting all transactions in, provision of financing for, and other dealings in new debt of longer than 14 days maturity issued on or after November 28, 2017 for the sanctioned entities. Similar measures were imposed to the energy sector for new debt with maturity longer than 60 days. The EU restrictive financial measures included limiting the access to EU primary and secondary capital markets for certain Russian banks and companies. The European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD) were suspended from signing new financing operations in Russia. (Crozet et al. 2016; European Council 2018; OFAC 2018; US Department of State 2018a)

In terms of immensity the financial sanctions against Russia can be divided into three categories. The first category comprises sectoral sanctions, which banned Russian banks the access to US and European credit markets. However, Russian banks were still able to manage their payments as well as the payments of their customers. This however, required turning to internal funding sources. The sectoral sanctions concerned mainly state-owned banks, which meant about half of the Russian banking sector. The second

[1] Sberbank is Russia's largest financial institution and accounts for approximately one-quarter of Russian banking assets and one-third of its banking capital (US Department of State 2018a).

category comprised sanctioning private banks. These sanctions were more severe in the sense that they forbid foreign exchange payments to, or on behalf of these banks clients. The third category is the so-called 'soft sanctions', which were the most stringent for the Russian economy. These consisted of sanctions that were not officially imposed, but had an impact on how Russian issuers were perceived and the adjusted stance on Russian capital. Since July 2014, international payments by Russian banks and companies have been conducted manually in order to examine for possible links to counterparties having financial ties with banks and companies on the sanctions list. This increases the duration and the uncertainty around the timing of payments, which in turn affects all Russian banks and companies that operate in international financial markets. (Orlova 2016)

Furthermore, Western financial sanctions have had a major negative impact on the Russian interbank market. Denying Russian state-owned banks the access to long-term debt financing loans and short-term foreign currency loans led to a dollar liquidity deficit in the Russian market. The dollar exchange turnover dropped from $1–2 billion per day to $100 million per day and the interest rate of overnight loans grew from 0.1–0.2 per cent to 1–1.5 per cent adding significant pressure on the ruble exchange rate during the fall of 2014. (Orlova 2016)

Denying the access to Western capital markets has also impacted Russian corporations. The directly sanctioned corporations have naturally suffered, but sanctions have also decreased the lending of non-sanctioned corporations as lenders anticipate sanctions will be extended further. This has obliged many Russian businesses to repay their external debt obligations, instead of refinancing, which has caused notable increase in private capital outflows and a decrease in the available capital to finance investments in the economy. External debt repayments contributing to the decline in Russia's foreign exchange reserves at least partially drove the outpouring in private capital outflows. This raised fears concerning the financial stability of Russia and the liquidity of Russia's international reserves being able to meet external financial commitments. (Dreyer et al. 2015)

The Russian authorities responded quickly to the Western financial sanctions through various measures to support the financial stability, such as by tightening the monetary policy and using exchange rate flexibility. The Central Bank of Russia (CBR) began to increase interest rates in 2014, raising the policy rate from 5.5 per cent to 9.5 per cent. As the market conditions worsened, CBR floated the ruble in November 2014 and later

raised the policy rate to 17 per cent. Furthermore, CBR launched a program to support the banking system, provided emergency capital to distressed banks and made cuts to the state budget. In late 2014, CBR laid down regulatory abstinence on loan classification, provisions and valuation due to market volatility and ruble devaluation. The measures mentioned above somewhat assisted in the mission to control the balance of payments and the pressures put on the Russian banking sector. (Ashford 2016; Epstein, Minasyan, Ostojic, Roitman & Stepanyan 2015)

4.2.2. Trade sanctions

As a part of the third sanctions wave, the US, the EU and other Western countries adopted trade sanctions against Russia and Crimea in July 2014. These sanctions targeted not only Russian entities and individuals, but also certain Western entities from exporting their goods to Russia and buying certain assets from Russia. The restrictive measures by the EU against Crimea and Sevastopol included an import ban on goods from Crimea and Sevastopol, restrictions on trade and investment related to certain economic sectors and infrastructure projects, a prohibition to supply tourism services in Crimea and Sevastopol and an export ban for certain goods and technologies. The sanctions by the EU against Russia consisted of imposing an export and an import ban on trade in arms, an export ban for dual-use goods for military use in Russia, restricting Russia's access to certain sensitive technologies and services that could be used for oil production and research. (Crozet et al. 2016; European Council 2018)

The US denied the supplying, exportation and re-exportation of goods, services and technology in support of research and production for deep-water, Arctic Offshore, and shale projects that have the possibility to produce oil in Russia and in Russia's maritime area and that involve five major Russian energy companies, Gazprom, Gazprom Neft, Lukoil, Surgutneftegas, and Rosneft. Other Western countries responded to the measures taken by the US and the EU and executed similar trade sanctions and financial sanctions. (Crozet et al. 2016; US Department of State 2018a)

The actions taken by the Western countries are meant to send a strong message to the Russian government that there are consequences for its actions for offending the sovereignty and territorial stability of Ukraine. The Western countries have declared that they will continue to support the Ukrainian government until Russia complies with international commitments and are willing to take additional measures to impose further political and economic pressure on Russia. (US Department of State 2018a)

4.3. Russian banking sector

In examining the impact of Western sanctions against Russian banks, it is important to shed light on the development and the current state of the Russian banking sector. The banking sector of Russia is relatively young. Over the last thirty years, it has transformed from a planned system to a market economy. Nevertheless, Russia is an emerging economy with a unique banking sector. A key distinction between Russia and other European emerging economies is that the Russian government still heavily controls the banking sector. Large state-owned banks dominate the financial sector and over the years, the Russian government has also continued to increase its ownership of the banking sector. (Akhmetov, Mamonov, Pankova, Pestova & Solntsev 2017; Fungáčová, Solanko & Weill 2010)

The Russian banking sector consists of three parts: the central bank, commercial banks and state-controlled banks. Commonly, banking sectors consist only of the two latter. The state-owned banks mainly dominate the Russian financial sector, for instance, the largest bank in Russia, Sberbank, is mostly owned by the central bank. Furthermore, banking sector deposits consist largely of deposits placed by major state-controlled businesses. According to the Bank of Russia (2016), the share of the five largest state-owned banks, Sberbank, VTB Group, Gazprombank Group, Rosselkhozbank, and Bank Moskow, accounted for 55.3% of the total banking sector assets in January 2017. However, as Solanko (2017) states, while it may help to preserve stability, the dominance of the Russian government on the banking sector may not be as favourable for improving economic growth, innovation and competition. (Kirdina & Vernikov 2013; Solanko 2017)

Nearly two decades ago, Russia started its privatisation programme to cut down the system of specialized state-owned banks. As a result, the market share of state-owned banks in Russia fell rapidly until Russia's major economic crisis in 1998, after which the market share of state-owned banks started to rise again. In January 2017, only around 8 per cent of the banking sector assets were held by foreign banks. Furthermore, the market share of the state-owned banks is currently approximately 60 per cent and growing, whereas in Central and Eastern Europe they have largely disappeared (Vernikov 2014). State-controlled banks receive financial support and assistance from the Russian state. They participate in monetary policy transmission in channelling public funds to commercial banks and set prices for bank products. (Bank of Russia 2016; Fungáčová et al. 2010; Kirdina et al. 2013; Mamonov & Vernikov 2015)

Table 2. Indicators of individual groups of credit institutions in Russia.

Group of credit institutions	Number of credit institutions		Share of banking sector total assets, %		Share of banking sector total capital, %	
	1.1.10.	**1.1.17.**	**1.1.10.**	**1.1.17.**	**1.1.10.**	**1.1.17.**
State-controlled banks	22	24	43.9	59.0	48.9	64.2
Foreign-controlled banks	106	74	18.3	8	16.9	11
Large private banks	136	134	32.1	31.2	27.4	21.1
Small and medium-sized banks based in the Moscow region	334	138	2.6	1	3.4	1
Small and medium-sized regional banks	409	205	2.8	1.1	3.1	1.6
Non-bank credit institutions	51	48	0.4	0	0.2	0
Total	1,058	623	100	100	100	100

Source: Central Bank of Russia

Generally, Russian banks participate in standard capital markets operations, grant loans to households and corporations, accept retail deposits and issue bonds. The funding of the banking sector consists of two main components: deposits and funds on organisations' accounts and household deposits. The access to foreign funding in Russia has been moderate. The market share of foreign banks in Russia increased fairly slowly in the early 2000's, partly due to the 1998 Russian financial crisis, under which many foreign investors incurred major losses. However, due to the financial sanctions by Western countries the access to foreign funding has continued to be complicated for Russian banks. Table 2 shows the key indicators of the Russian banking sector from January 2010 versus January 2017. (Bank of Russia 2016; Fungáčová et al. 2010)

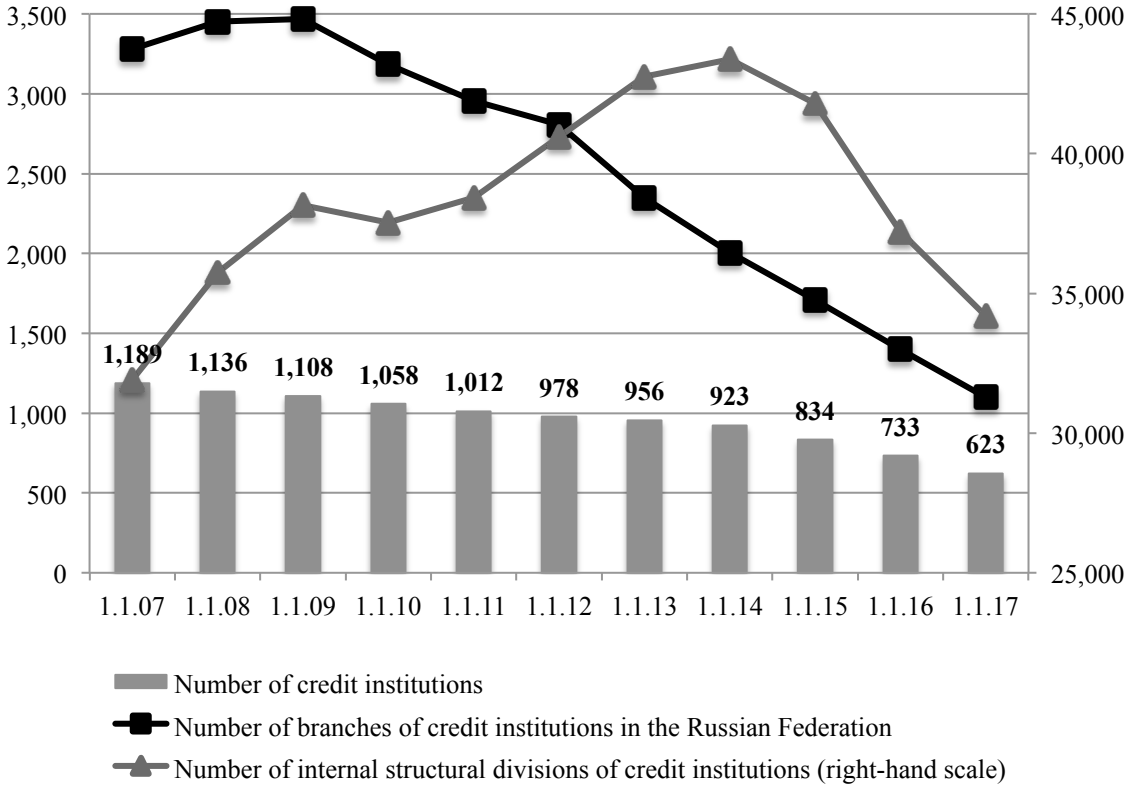

Figure 3. Number of credit institutions and their branches in Russia.

According to Kirdina et al. (2013), Russia is an under-banked economy. In 2000, there were more than 1,300 banks operating in Russia. Since then, the number of credit institutions has declined quickly by nearly 50 per cent from approximately 1,189 to 623 credit institutions in January 2017 (Figure 3). There are also heavy regional differences in providing banking services in Russia. Significant share of the Russian banks are located in the Moscow capital and the rest are scattered across Russia's 85 regions. Furthermore, only larger banks have connections to regions outside Moscow. Therefore, Sberbank and a few small private banks are the ones providing services to some of the distant regions in Russia. Important factors explaining the decrease in the number of banks operating in Russia are the structural reforms taken over the recent years and the rehabilitation of the Russian banking sector. The reforms carried out have improved the banking and financial market regulation as well as the banking supervision. Nevertheless, one can argue that there is still need for further structural reforms. (Fungáčová et al. 2010; Solanko 2017)

5. DATA & METHODOLOGY

This chapter is divided into three parts explaining the research hypotheses, the data and the methodology used in this study. The first section presents the research hypotheses in detail followed by the data description. The data description describes the regression variables meaning the dependent variables, independent variables and the control variables used in the empirical analysis. This chapter also provides descriptive statistics of the study sample. Thereafter, the methodology is explained and the analysis used in this study.

5.1. Research hypotheses

The purpose of this study is to examine the impact of Western economic sanctions on the riskiness and the funding structure of the Russian banking sector. In order to examine the impact of sanctions on bank risk and funding structure, five hypotheses are developed. The first two account for the impact of sanctions on the riskiness of the Russian banking sector and the latter three account for the impact of sanctions on the funding structure.

I examine bank risk through credit risk and capital risk, as those are likely to be affected by sanctions. Credit risk can be measured by the quality of the loan portfolio. During economic downturns and crises, the quality of the loan portfolios of banks usually deteriorates (Konstantakis, Michaelides & Vouldis 2016). Sanctions against Russia can be viewed as a form of crisis for the Russian banking sector, hence, it is justifiable to hypothesise that sanctions have decreased the quality of the loan portfolios of Russian banks. The first hypothesis is constructed as follows:

H1: *Western economic sanctions have negatively affected the quality of the loan portfolios of Russian banks*

The riskiness of a bank can also be examined through its capital. After the imposition of Western sanctions, the Central Bank of Russia imposed new capital requirements for banks to hold additional capital and provided capital to distressed banks (Stiekema 2015). According to a study by Us (2017), banks with high capital ratios can have low quality loan portfolios. This can be due to the lack of strict implementation of laws, however, it can also be a result of the need for capital as a safety to cover for possible

losses related to credit risk. The results of his study showed that a higher capital adequacy was associated with a higher number of non-performing loans after the global financial crisis. Another study by Rime (2001) also found a positive connection with bank risk and capital in how higher capital may embolden banks to increase their share of risky assets, which in turn increases the amount of non-performing loans. Therefore, unlike one would perhaps assume, I hypothesise that sanctions have increased the capitalisation Russian banks. Thus, the second hypothesis is structured as follows:

H2: *Western economic sanctions have increased the capitalisation of Russian banks*

The last three hypotheses are developed to examine the impact that sanctions have had on the funding structure of the Russian banking sector. In examining the funding structure, this study focuses on deposits in terms of their sources and debt financing. Bank funding is strongly connected to crises and shocks in the sense that troubles on the asset side of the bank's balance sheet typically triggers funding difficulties (BIS 2013). Banks adjust their funding sources towards more stable source during crises, relying heavily on household deposits. According to the Bank of Russia (2016), after the imposition of sanctions the funding base of Russian banks grew mainly through household deposits and the funds of the Russian corporate sector were used to protect growth in the industrial production. Thus, their volume as a funding source for banks decreased. Therefore, the next two hypothesis are defined as follows:

H3: *Western economic sanctions have increased the share of household deposits of Russian banks*

H4: *Western economic sanctions have decreased the share of corporate deposits of Russian banks*

One of the key aims of sanctions was to reduce debt financing for Russian banks by blocking Russian banks the access to Western funding. In addition, Western banks and financial institutions abstained also from financing Russian companies that were not directly targeted by sanctions in order to protect themselves from any possible risk (Dreyer et al. 2015; Orlova 2016). Thus, the fifth hypotheses is defined as follows:

H5: *Western economic sanctions have decreased the debt financing of Russian banks*

I also examine the impact of sanctions on the directly sanctioned Russian banks. For this I use the same hypotheses as defined above, but adjust them to account only for the directly sanctioned banks. I expect that Western sanctions have had stronger impact on the directly targeted banks in comparison to the Russian banking sector as a whole.

5.2. Data description

This study is conducted using micro-level bank-specific balance sheet data on Russian banks. The sample consists of 1,032 Russian banks, which present the entire Russian banking sector. The data is an unbalanced panel, due to banks leaving and entering the market as a result of failures and mergers. The sample consists of monthly data and covers a period from January 2011 to December 2016. In addition to bank balance sheet data, this study uses also data on oil prices and Russia GDP growth, which are obtained from The Organisation for Economic Co-operation and Development OECD Database and Thomson Reuters Worldscope Database.

The sample consists of two time periods: 'before sanctions' and 'during sanctions'. The time period 'before sanctions' spans from January 2011 to June 2014. Consequently, the period 'during sanctions' starts from July 2014 and even though sanctions are still in place, the period ends in December 2016. Thus, the sample period includes three and a half years before sanctions and two and a half years after the implementation of sanctions. Even though, the first wave of Western sanctions against Russia began in March 2014, the first set of sanctions consisted only of asset freezes and travel bans on certain Russian individuals and thus, it can be assumed that they did not have a major impact on the riskiness and the funding structure of Russian banks. In July 2014, however, the US and the EU imposed broad and intense trade sanctions, financial sanctions and sectoral sanctions against Russia followed by other Western countries.

Table 3 presents the descriptive statistics of the data sample for the sample period January 2011 to December 2016. The table shows the mean, median, standard deviation (volatility), minimum and maximum, skewness and kurtosis followed by the number of observations for each regression variable. The table is divided into five main categories: dependent variables, independent variables, bank-specific, industry-specific and macroeconomic controls. Dependent variable category is divided further into bank risk and funding structure. The number of observations for each variable varies from 60,202 to 62,425.

Table 3. Descriptive statistics of the study sample.

	Mean	Median	Max	Min	Std.Dev.	Skewness	Kurtosis	Observations
Dependent variables								
Bank risk								
Overdue loans	0.04	0.02	1.00	0.00	0.07	6.63	66.03	60,202
Capital adequacy	0.22	0.16	1.00	-3.00	0.18	1.71	8.12	62,262
Funding structure								
Household deposits	0.30	0.29	4.00	0.00	0.24	0.31	2.97	62,262
Corporate deposits	0.33	0.30	2.07	-0.01	0.19	0.66	3.23	62,262
Debt ratio	0.93	0.95	1.00	-0.78	0.06	-2.82	20.92	62,262
Independent variables								
Sanctions	0.36	0.00	1.00	0.00	0 .48	0.58	1.34	62,425
Bank-specific characteristics								
Ln assets	15.27	15.07	23.90	7.28	1.97	0.39	4.12	62,262
Loans to assets	0.60	0.65	0.99	0.00	0.22	-1.01	3.76	62,262
Capitalisation	0.22	0.16	1.00	-3.00	0.18	1.71	8.12	62,262
Industry-specific characteristics								
Bank concentration	0.01	0.00	1.00	0.00	0.08	11.90	142.51	62,425
Macroeconomic characteristics								
Economic growth	0.02	0.02	0.05	-0.03	0.02	-0.45	2.08	62,425
Oil price	91.43	106.12	125.61	36.09	27.00	-0.81	2.00	62,425

Table 4 presents the results for testing the differences between the means of before sanctions and during sanctions in terms of the variables used in this study. ***, ** and * indicate statistically significant differences at the 1%, 5%, and 10% levels. The results suggest that the amount of overdue loans of Russian banks increased significantly after the imposition of Western sanctions. Capital adequacy increased also, however, the results are significant only at 10 per cent level. The share of household deposits increased significantly during sanctions, while the share of corporate deposits decreased. The debt ratio also decreased significantly compared to before sanctions. The differences between bank-characteristics indicate that during sanctions the Russian banking sector assets and the amount of loans have also increased. Furthermore, the table shows that controlling for macroeconomic factors is particularly important as the differences in means is highly significant for both the economic growth and oil price.

Table 4. Testing differences between means.

	Before sanctions	During Sanctions	Test of difference	
	Mean	Mean	Difference in Means	t-test
Dependent variables				
Bank risk				
Overdue loans	3.29	5.60	2.31	36.54***
Capital adequacy	22.12	22.38	0.26	1.71*
Funding structure				
Household deposits	28.60	31.81	3.21	16.36***
Corporate deposits	34.44	29.28	-5.16	-32.30***
Debt ratio	94.28	91.92	-2.36	-43.38***
Bank-specific characteristics				
Ln assets	15.10	15.57	0.47	28.42***
Loans to assets	59.89	60.78	0.89	4.91***
Capitalisation	22.12	22.38	0.26	1.71*
Macroeconomic characteristics				
Economic growth	3.18	-1.14	-4.33	-433.62***
Oil price	109.47	59.45	-50.02	-486.53***

5.2.1. Dependent variables

As this study examines the impact of Western sanctions on the riskiness and the funding structure of Russian banks, separate variables are chosen to account for the riskiness and the funding structure. The main variables used to examine bank riskiness are overdue loans to account for credit risk and capital adequacy to account for capital risk. Overdue loans are defined here as the ratio of overdue loans over total loans outstanding. Overdue loans e.g. non-performing loans are one of the most commonly used indicators of credit risk and are used to examine the quality of the loan portfolio. Overdue loans are a major challenge to the development of the banking sector. According to a study conducted by Zhang, Cai, Dickinson and Kutan (2016), the growth of non-performing loans increases riskier lending and reduces the quality of loan portfolios and the stability of the financial sector. Other studies have also found that

non-performing loans can predict the financial distress of banks. Demirgüc-Kunt (1989) and Barr, Seiford and Siems (1994) found that failing banks have often had high NPL ratios before their failure. Thus, examining overdue loans as a proxy for bank riskiness presents a strong case in terms of Western sanctions against Russia.

Another dependent variable used in this study to account for bank riskiness is the capital to assets ratio, also known as the leverage ratio. Capital to assets ratio is one of the main proxies for capital adequacy. As previously mentioned in chapter two, capital adequacy is an important element in the international bank solvency standards of the Basel Committee of the Bank for International Settlements (BIS) and an indicator for bank capitalisation (De Haan, Shehzad & Scholtens 2010). Banks must hold a sufficient amount of capital as a safety against unexpected losses and negative shocks (Karim, Hassan, Hassan & Mohamad 2014).

In examining the impact of Western sanctions on the funding structure of Russian banks, this study looks at deposits of the liability side of Russian banks' balance sheets in terms of their source as well as the debt financing of Russian banks. The dependent variables examining the impact of sanctions on the funding structure of Russian banks are household deposits to total deposits and corporate deposits to total deposits. Debt financing is examined by the debt ratio, which is defined as total liabilities to total assets. An overview of the dependent variables and their expected signs are presented in table 5.

Table 5. Dependent variables and their expected signs.

Category	**Dependent variable**	**Sanctions**
Bank Risk	Overdue loans	+
	Capital adequacy	+
Funding Structure	Household deposits	+
	Corporate deposits	-
	Debt ratio	-

5.2.2. Independent variables

I define Western sanctions, which is also the dependent variable as a dummy variable in the empirical specification. It takes on a value of 1 from July 2014 onwards, which is the time when the US and the EU implemented the third wave of sanctions followed by other Western countries on Russia and it takes on a value of 0 before that.

5.2.3. Control variables

This study uses various control variables that have been used in previous studies examining bank riskiness, funding structure and the Russian banking sector. The same controls apply to both examining bank riskiness and funding structure. The control variables can be divided into bank-specific, industry-specific and macroeconomic variables. The bank-specific control variables include bank size, loans to assets and capitalisation. Bank size is defined as the log of banks' total assets. According to Fungáčová and Solanko (2008), bank size is particularly important in Russia, where only the few largest banks hold most of the banking sector assets. Capitalisation is a measure of leverage risk and is defined as the ratio of capital to total assets. Capitalisation is omitted as a control variable in the analysis, when it is examined as a dependent variable.

The Russian banking sector is heavily concentrated. Therefore, this study controls for bank concentration by using a dummy variable, which takes on a value of 1 for the four largest banks in Russia: Sberbank, VTB, VTB24 and Gazprombank. Finally, I control for GDP growth as it may have an effect on the Russian bank sector. Russia is also a significant producer of oil exports, which makes it heavily sensitive to fluctuations in oil prices. GDP and oil prices are strongly and positively correlated in Russia (Fungáčová et al. 2008). Table 6 presents an overview of the control variables used in this study and their descriptions.

Table 6. Detailed description of control variables.

Control Variables		Description
Bank-specific	Size	Log of total assets
	Loans to assets	Total loans to total assets
	Capitalisation	Capital to total assets
Industry-specific	Concentration	A dummy of the four largest Russian banks: Sberbank, VTB, VTB24 & Gazprombank
Macroeconomic	Economic growth	Russia real GDP per capita growth rate
	Oil price	Crude oil price (US Dollars per Barrel)

5.3. Empirical model

This study uses panel data fixed effects model and the differences-in-differences model to examine the impact of Western sanctions on the Russian banking sector. Bank fixed effects are included in all of the regressions to control for bank-specific factors. Even though the data sample is an unbalanced panel, it is not randomly selected. Therefore, the fixed effects model is chosen instead of the random effects model. In order to avoid multicollinearity, I omit one dummy from the bank concentration variable, as it is highly correlated with the sanctions dummy. I also regress the models separately for the macroeconomic control variables, oil price and economic growth, as they are also likely to be highly correlated and cause multicollinearity problems. I use lagged control variables to avoid endogeneity problems in the model. The empirical analysis is conducted using Stata.

For panel fixed effects I estimate the following model for each dependent variable separately:

(13) $$Bank\ impact\ measure_{it} = \beta_0 + \beta_1 Sanctions_{it} + \gamma_i Controls_{it} + \varepsilon_{it}$$

Where

$Bank\ impact\ measure_{it}$ = The measures of bank risk, e.g. overdue loans and capital adequacy and bank funding structure, e.g. household deposits, corporate deposits and debt ratio.

$Sanctions_{it}$ = The independent dummy variable, which takes on a value of 1 from July 2014 onwards and a value of 0 from January 2011 to June 2014.

$Controls_{it}$ = Control variables for bank-specific, industry-specific and macroeconomic variables.

ε_{it} = Error term

I apply the differences-in-differences method to examine the impact of sanctions on the directly sanctioned banks. Thus, the following model is estimated for each dependent variable separately:

(14) $$Bank\ impact\ measure_{it} = \beta_0 + \beta_1 Sanctions_{it} + \beta_2 Sanctions_{it} \times TargetedBank_{it} + \gamma_i Controls_{it} + \varepsilon_{it}$$

Where

$Bank\ impact\ measure_{it}$ = The measures of bank risk, e.g. overdue loans and capital adequacy and bank funding structure, e.g. household deposits, corporate deposits and debt ratio.

$Sanctions_{it}$ = A dummy variable that takes on a value of 1 from July 2014 onwards and a value of 0 from January 2011 to June 2014.

$TargetedBank_{it}$ = A dummy variable that takes on a value of 1, if the bank has been directly targeted by Western sanctions.

$Controls_{it}$ = Control variables for bank-specific and macroeconomic variables.

ε_{it} = Error term

6. EMPIRICAL FINDINGS

This chapter presents the empirical findings and results obtained by using the data and the statistical models that were presented in the previous chapter. The results for bank risk will be presented first, followed by the results on bank funding structure. The results for Russian banking sector as a whole from the panel fixed effects method are examined first, followed by the results of the differences-in-differences approach for the directly sanctioned banks.

6.1. Empirical findings on bank risk

Table 7 presents the results for panel fixed effects method on bank risk measures, overdue loans and capital adequacy. The results represent the Russian banking sector as a whole. Bank fixed effects are included in both of the regressions and both regressions include bank-specific, industry-specific and macroeconomic control variables. The macroeconomic variables *Oil price* and *Economic growth* are regressed separately to avoid multicollinearity. Model (1) presents the results with *Oil price* as the macroeconomic control variable and followed by model (2), which presents the results with *Economic growth* as the macroeconomic control variable.

The findings show that Western economic sanctions have an impact on the riskiness of the Russian banking sector when examining overdue loans as the dependent variable. The *Sanctions* coefficient for overdue loans is positive and highly significant for both models (1) and (2) at 1% significance level. This means that the share of overdue loans of Russian banks has increased significantly after the imposition of sanctions since July 2014. As mentioned in the previous chapter, the increase in overdue loans indicates a weakening in the quality of the loan portfolios. Thus, the results are in line with my hypothesis that sanctions have a negative impact on the quality of the loan portfolios of Russian banks.

Table 7 also indicates that overdue loans are significantly and negatively associated with bank-specific controls, bank size and loans to assets at 1% significance level. This means that smaller banks have higher amounts of overdue loans in their loan portfolios than larger banks. In addition, banks that have fewer loans outstanding tend to have more overdue loans in their loan portfolios. I find that bank capitalisation is negatively associated with overdue loans; however, the result is statistically insignificant. Based on

the findings, bank concentration is also negatively associated with overdue loans, yet the result is also statistically insignificant. The macroeconomic controls, oil price and economic growth are both negatively and significantly associated with overdue loans at 1% level. This is understandable, as the amount of overdue loans tend to increase and the quality of the loan portfolios of banks decrease during economic downturns and crises. Also, Russia is heavily sensitive to fluctuations in oil prices (Fungáčová et al. 2008) therefore; a decrease in oil prices affects negatively the quality of the loan portfolios of Russian banks. Based on the R-squared the models (1) and (2) are able to explain 7% of the variability. However, the F-statistic and the p-value for the F-test indicate that the models have explanatory power.

The table also shows that Western economic sanctions have an impact on the riskiness of the Russian banking sector when examining capital adequacy as the dependent variable. Based on the findings, the *Sanctions* coefficient for capital adequacy is positive and highly significant for both models (1) and (2) at 1% significance level. This implies that the capitalisation of Russian banks has increased after the imposition of Western sanctions. This supports the presumption that sanctions have increased the capitalisation of Russian banks, which can be a result of the need for more capital as a safety to cover for possible losses. The results are also in line with the findings by Us (2017) and Rime (2001) that banks with high capital ratios can have low quality loan portfolios.

I record that bank size; oil price and economic growth are negatively and significantly associated with capital adequacy at 1% level. This implies that smaller banks are less capitalised, while the findings suggest that during economic downturns and negative fluctuations in oil prices the capitalisation of banks increase. This can be a result of banks accumulating capital as a safety to cover for possible losses. The findings are similar to the ones made by Us (2017) and Rime (2001), who found that during economic crises bank capitalisation increased. The table also shows that loans are positively and significantly associated with capital adequacy at 1% level, which means that the more loans the bank has outstanding, the higher its capital adequacy is. I find that bank concentration is negatively associated with capital adequacy, however the result is insignificant. The control variable *Capitalisation* is naturally omitted from the regression for capital adequacy as it virtually measures the same thing. The R-squared indicates the models are able to explain 38% of the variability. The F-statistic and the p-value for the F-test also confirm that the models have explanatory power.

Table 7. Panel fixed effects results for bank risk measures.

Table 7 presents the results for applying the panel fixed effects method to overdue loans and capital adequacy. Overdue loans are defined here as the ratio of overdue loans to total loans and capital adequacy is defined as the ratio of capital to total assets. Model (1) presents the results with *Oil price* as the macroeconomic control variable and model (2) presents the results with *Economic growth* as the macroeconomic control variable. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at 1%, 5%, and 10% levels, respectively.

	Overdue loans		Capital adequacy	
	(1)	(2)	(1)	(2)
C	0.262 ***	0.217 ***	1.340 ***	1.329 ***
	(0.044)	(0.043)	(0.079)	(0.078)
Sanctions	0.011 ***	0.019 ***	0.012 ***	0.010 ***
	(0.002)	(0.002)	(0.003)	(0.003)
Ln assets	-0.010 ***	-0.009 ***	-0.073 ***	-0.074 ***
	(0.002)	(0.003)	(0.005)	(0.005)
Loans to assets	-0.064 ***	-0.066 ***	0.044 ***	0.043 ***
	(0.012)	(0.012)	(0.016)	(0.016)
Capitalisation	-0.013	-0.010		
	(0.023)	(0.024)		
Concentration	-0.082	-0.088	-0.005	-0.012
	(0.084)	(0.084)	(0.016)	(0.016)
Oil price	-0.000 ***		-0.000 ***	
	(0.000)		(0.000)	
Economic growth		-0.215 ***		-0.356 ***
		(0.047)		(0.064)
Bank fixed effects	Yes	Yes	Yes	Yes
Observations	60,190	60,190	62,246	62,246
R-squared	0.07	0.07	0.38	0.38
F-statistic	17.94	19.48	51.82	50.82
Prob(F-statistic)	0.00	0.00	0.00	0.00

Based on the results in table 7, I accept the first hypothesis H1: "Western economic sanctions have negatively affected the quality of the loan portfolios of Russian banks" and the second hypothesis H2: "Western economic sanctions have increased the capitalisation of Russian banks". The findings support the findings of previous studies examining overdue loans and capital adequacy. I find that sanctions have had a significant impact on the riskiness of the Russian banking sector by affecting negatively the quality of the loan portfolios and by increasing the capitalisation of Russian banks. The results are robust for bank-specific, industry-specific and macroeconomic factors.

6.1.1. Empirical findings on directly targeted banks

Table 8 presents the findings for the differences-in-differences method in examining the impact of Western economic sanctions on the riskiness of the directly sanctioned Russian banks, by having overdue loans as the dependent variable. Model (1) presents the results without the control variables. Models (2) and (3) present the results with bank-specific and macroeconomic control variables, with *Oil price* and *Economic growth* regressed separately to avoid multicollinearity. All models include bank fixed effects. I do not include the *Concentration* dummy in the differences-in-differences regressions as it includes the same banks as in the *Targeted bank* variable, as they were also directly targeted by Western sanctions. The coefficient *Sanctions*Targeted bank* is a combination of two dummy variables, *Sanctions* and *Targeted bank*, which captures the differences-in-differences effect. It takes on a value of one for observations during sanctions and with a directly sanctioned bank in question.

The findings show that Western economic sanctions do not have an impact on the riskiness of the directly sanctioned banks when having overdue loans as the dependent variable. *Sanctions*Targeted bank* coefficient is positive, yet statistically insignificant for all three models. The findings are surprising, as I thought that the sanctioned banks would be strongly affected by sanctions, as those are the ones directly targeted. However, the results are somewhat in line with table 7 that smaller banks have a higher share of overdue loans as the directly sanctioned banks are amongst the largest banks in Russia. This could be one reason why the quality their loan portfolios have not been as severely affected by sanctions. Larger banks have the advantage of diversification across regions, industries and businesses, which make them less volatile in general (Ip 2016).

However, I record that bank size and capitalisation are significantly and positively related to overdue loans at 1% level. Interestingly, the findings are opposite to the findings in table 7 indicating that the larger and the more capitalised the bank, the higher the amount of overdue loans in their loan portfolios. I find that loans to assets, oil price and economic growth are significantly and negatively associated with overdue loans all at 1% level. This supports the findings in table 7. After applying the control variables into the regression the R-squared increases from 2% to 4% meaning that the models (2) and (3) are able to explain 4% of the variability. Nevertheless, as the F-statistic is reasonably high and the p-value for the F-test highly significant, the models have explanatory power.

Based on the findings in table 8, I reject hypothesis H1 and conclude that Western economic sanctions do not have a significant negative impact on the quality of the loan portfolios of the directly sanctioned Russian banks. The result are surprising, as one would assume they would be the ones strongly affected, as sanctions were put in place to directly target them.

Table 8. Differences-in-differences results for overdue loans.

Table 8 presents the results of applying the differences-in-differences regression method to overdue loans. Overdue loans are defined as the amount of overdue loans to total loans. Model (1) presents the method without control variables. Model (2) presents the corresponding method with control variables and the macroeconomic variable *Oil price*. Model (3) presents the method with control variables and the *Economic growth* macroeconomic control variable. *Sanctions*Targeted bank* coefficient is a combination of the dummy variables *Sanctions* and *Targeted bank* capturing the effect of the directly sanctioned Russian banks. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)	
C	0.033	***	0.084	***	0.049	***
	(0.000)		(0.006)		(0.005)	
Sanctions	0.023	***	0.007	***	0.018	***
	(0.001)		(0.001)		(0.001)	
Targeted bank	0.029	***	0.032	***	0.031	***
	(0.004)		(0.005)		(0.005)	
Sanctions*Targeted bank	0.009		0.008		0.009	
	(0.012)		(0.012)		(0.012)	
Ln assets			0.001	***	0.001	***
			(0.000)		(0.000)	
Loans to assets			-0.047	***	-0.047	***
			(0.003)		(0.003)	
Capitalisation			0.014	***	0.015	***
			(0.003)		(0.003)	
Oil price			-0.000	***		
			(0.000)			
Economic growth					-0.122	***
					(0.022)	
Bank fixed effects	Yes		Yes		Yes	
Observations	62,202		60,190		60,190	
R-squared	0.02		0.04		0.04	
F-statistic	358.42		188.97		189.41	
Prob(F-statistic)	0.00		0.00		0.00	

Table 9 presents the empirical findings for the differences-in-differences approach in examining the impact of Western economic sanctions on the riskiness of the directly sanctioned Russian banks, by having capital adequacy as the dependent variable. The specifications for all three models are the same as in table 8. Based on the findings, sanctions do not have an impact on the riskiness of the directly sanctioned banks when having capital adequacy as the dependent variable. *Sanctions*Targeted bank* coefficient is negative and significant only without control variables in model (1) at 1% level. After including the control variables into the regression model, the coefficient *Sanctions*Targeted bank* becomes positive for models (2) and (3) although, the results are statistically insignificant. The findings are again surprising, as I presumed the directly sanctioned banks would be more affected by sanctions than the Russian banking sector as a whole, given that targeted sanctions are meant to specifically have an impact on them. Perhaps, one reason behind this could be that the targeted banks, which are also among the largest in Russia, are able to raise capital more easily than small and mid-sized banks and therefore, may not be as severely affected by sanctions. Also, maybe due to their size and for being state-owned, the directly sanctioned banks do not need to raise as much capital as smaller and privately owned banks as a safety to cover for possible losses.

The findings also suggest that bank size, oil price and economic growth are significantly and negatively associated with capital adequacy at 1% level. These findings are in line with the results in table 7. This confirms that smaller banks are less capitalised, while economic downturns and negative fluctuations in oil prices increases capital adequacy. Loans to assets is significantly and positively associated with capital adequacy. This is also in line with the findings in table 7. After adding the control variables into regression model, the R-squared increases from 0% to 35% meaning that the models (2) and (3) are able to explain 35% of the variability. The F-statistic is also very high and the p-value for the F-test highly significant indicating strong explanatory power.

Based on the findings in table 9, I reject hypothesis H2 and conclude that Western economic sanctions do not have a significant impact on the capitalisation of the directly sanctioned Russian banks. In conclusion, I find that sanctions do not have a significant impact on the riskiness of the directly sanctioned Russian banks. The findings are surprising, as I presumed that the directly targeted banks would be the ones most severely affected by sanctions.

Table 9. Differences-in-differences results for capital adequacy.

Table 9 presents the results of applying the differences-in-differences regression method to capital adequacy. Capital adequacy is defined as the ratio of capital to assets. Model (1) presents the method without control variables. Model (2) presents the corresponding method with control variables and the macroeconomic variable *Oil price*. Model (3) presents the method with control variables and the *Economic growth* macroeconomic control variable. *Sanctions*Targeted bank* coefficient is a combination of the dummy variables *Sanctions* and *Targeted bank* capturing the effect of the directly sanctioned Russian banks. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)	
C	0.224	***	1.092	***	1.074	***
	(0.001)		(0.008)		(0.007)	
Sanctions	-0.002		0.012	***	0.013	***
	(0.001)		(0.002)		(0.002)	
Targeted bank	-0.118	***	0.246	***	0.247	***
	(0.002)		(0.007)		(0.007)	
Sanctions*Targeted bank	-0.016	***	0.002		0.002	
	(0.003)		(0.008)		(0.008)	
Ln assets			-0.057	***	-0.057	***
			(0.000)		(0.000)	
Loans to assets			0.034	***	0.033	***
			(0.004)		(0.004)	
Oil price			-0.000	***		
			(0.000)			
Economic growth					-0.230	***
					(0.047)	
Bank fixed effects	Yes		Yes		Yes	
Observations	62,262		62,246		62,246	
R-squared	0.00		0.35		0.35	
F-statistic	2236.27		3552.88		3545.02	
Prob(F-statistic)	0.00		0.00		0.00	

6.2. Empirical findings on bank funding structure

Table 10 presents the results for panel fixed effects method on bank funding structure measures, household deposits and corporate deposits. The same specifications apply here as in table 7. The findings show that Western economic sanctions have an impact on the funding structure of the Russian banking sector when examining household deposits as the dependent variable. The *Sanctions* coefficient for household deposits is positive and highly significant for both models (1) and (2) at 1% significance level. This implies that the share of household deposits of Russian banks has increased significantly after the imposition of Western sanctions. The findings are in line with the phenomenon that during crises, banks adjust their funds towards more stable sources of funding, such as household deposits (BIS 2013). It also supports the hypothesis that Western sanctions have increased the share of household deposits of Russian banks.

Based on the findings, capitalisation, oil price and economic growth are significantly and negatively associated with household deposits at 1% level. Thus, banks that are less capitalised tend to rely more on household deposits as a funding source then banks that are more capitalised. The findings also suggest that during economic downturns the share of household deposits increases, which supports the findings of previous studies. Negative fluctuations in oil prices tend to increase the share of household deposits. Bank size is also negatively related household deposits, however, the results are insignificant. Loans to assets is significantly and positively related to household deposits at 1% level. This indicates that banks that have more loans outstanding accumulate more deposits from households. Bank concentration is positively related to household deposits, however the findings are insignificant. Based on the R-squared the models (1) and (2) are able to explain 29% of the variability. The F-statistic and the p-value for the F-test also indicate that the models have explanatory power.

In addition to household deposits, table 10 also presents that Western economic sanctions have an impact on the funding structure of the Russian banking sector by examining corporate deposits as the dependent variable. The *Sanctions* coefficient for corporate deposits is negative and highly significant for both models (1) and (2) at 1% level. This implies that the share of corporate deposits of Russian banks has decreased significantly after the imposition of Western sanctions. As mentioned in the previous chapter, since the imposition of sanctions the funds of Russian corporations have been widely used to ensure growth in industrial production, which is why their volume in

banks have decreased (Bank of Russia 2016). Thus, the funding base of Russian banks has grown mainly through household deposits.

Furthermore, I record that all bank-specific control variables; bank size, loans to assets and capitalisation are negatively and significantly associated with corporate deposits at 1% level. This implies that banks that are smaller, less capitalised and have more loans outstanding, accumulate more corporate deposits on average. I also find that bank concentration is significantly and negatively related to corporate deposits at 5% level. Oil price and economic growth are positively related to corporate deposits, both at 1% significance level. This means that corporate deposits are being used more as a funding source during economic upturns and when oil prices are rising. Based on the R-squared the models (1) and (2) are able to explain 17% of the variability. The F-statistic and the p-value for the F-test also indicate explanatory power.

Based on the findings in table 10, I accept hypothesis H3: "Western economic sanctions have increased the share of household deposits of Russian banks" and hypothesis H4: "Western economic sanctions have decreased the share of corporate deposits of Russian banks". I conclude that sanctions have an impact on the funding structure of the Russian banking sector in terms of funding sources, household deposits and corporate deposits. The results are robust for bank-specific, industry-specific and macroeconomic factors.

Table 11 presents the results for panel fixed effects method on the bank funding structure measure, debt ratio, which is used to examine the impact of sanctions on the debt financing of Russian banks. The same specifications apply here as in table 7 and table 10. The table shows that sanctions have an impact on the funding structure of the Russian banking sector when examining debt ratio as the dependent variable. The *Sanctions* coefficient for debt ratio is negative and highly significant for both models (1) and (2) at 1% significance level. This supports the assumption that sanctions have decreased the debt financing of Russian banks, as it is one of the aims of Western sanctions.

I record that bank size; oil price and economic growth are positively and significantly associated with debt ratio at 1% level. This implies that larger banks rely more on debt financing than smaller banks. Also, debt is being used more as a funding source during economic upturns and when oil prices are rising. Capitalisation is also positively associated with debt ratio at 5% level in model (1) and at 10% level in model (2). Loans to assets are negatively and significantly related to the debt ratio at 1% level. This

means that banks that have fewer loans outstanding rely more on debt financing. Bank concentration is positive, but statistically insignificant. The R-squared shows that the models (1) and (2) are able to explain 12% of the variability. The F-statistic and the p-value for the F-test also indicate that the models have explanatory power. Based on the findings in table 11, I accept hypothesis H5: “Western economic sanctions have decreased the debt financing of Russian banks”. I conclude that sanctions have had a significant impact on the funding structure of Russian banks in terms of debt financing.

Table 10. Panel fixed effects results for funding source measures.

Table 10 presents the results of applying the panel fixed effects regression method to household deposits and corporate deposits. Household deposits are defined as the ratio of household deposits to total deposits and corporate deposits are defined as the ratio of corporate deposits to total deposits. Model (1) presents the results with *Oil price* as the macroeconomic control variable and model (2) presents the results with *Economic growth* as the macroeconomic control variable. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at the 1%, 5%, and 10% levels, respectively.

	Household deposits		Corporate deposits	
	(1)	(2)	(1)	(2)
C	0.382 ***	0.373 ***	0.678 ***	0.644 ***
	(0.058)	(0.059)	(0.068)	(0.066)
Sanctions	0.027 ***	0.025 ***	-0.040 ***	-0.028 ***
	(0.003)	(0.003)	(0.003)	(0.003)
Ln assets	-0.003	-0.004	-0.016 ***	-0.013 ***
	(0.004)	(0.004)	(0.004)	(0.004)
Loans to assets	0.051 ***	0.049 ***	-0.043 ***	-0.042 ***
	(0.013)	(0.013)	(0.015)	(0.015)
Capitalisation	-0.203 ***	-0.205 ***	-0.408 ***	-0.403 ***
	(0.026)	(0.027)	(0.029)	(0.029)
Concentration	0.022	0.013	-0.098 **	-0.089 **
	(0.028)	(0.028)	(0.039)	(0.039)
Oil price	-0.000 ***		0.000 ***	
	(0.000)		(0.000)	
Economic growth		-0.443 ***		0.521 ***
		(0.059)		(0.069)
Bank fixed effects	Yes	Yes	Yes	Yes
Observations	62,246	62,246	62,246	62,246
R-squared	0.29	0.29	0.17	0.17
F-statistic	27.36	27.46	76.21	75.96
Prob(F-statistic)	0.00	0.00	0.00	0.00

Table 11. Panel fixed effects results for debt ratio.

Table 11 presents the results of applying the panel fixed effects regression method to the debt ratio. Debt ratio is defined as the ratio of total liabilities to total assets. Model (1) presents the results with *Oil price* as the macroeconomic control variable and model (2) presents the results with *Economic growth* as the macroeconomic control variable. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at the 1%, 5%, and 10% levels, respectively.

	Debt ratio	
	(1)	(2)
C	0.793 ***	0.817 ***
	(0.027)	(0.027)
Sanctions	-0.016 ***	-0.019 ***
	(0.001)	(0.001)
Ln assets	0.008 ***	0.008 ***
	(0.002)	(0.002)
Loans to assets	-0.030 ***	-0.028 ***
	(0.006)	(0.006)
Capitalisation	0.026 **	0.026 *
	(0.013)	(0.013)
Concentration	0.036	0.042
	(0.041)	(0.040)
Oil price	0.000 ***	
	(0.000)	
Economic growth		0.237 ***
		(0.028)
Bank fixed effects	Yes	Yes
Observations	62,246	62,246
R-squared	0.12	0.12
F-statistic	51.38	49.74
Prob(F-statistic)	0.00	0.00

6.2.1. Empirical findings on directly targeted banks

Table 12 presents the findings for the differences-in-differences method in examining the impact of Western economic sanctions on the funding structure of the directly sanctioned Russian banks, by examining household deposits as the dependent variable. The same specifications apply here as in tables 8 and 9. The results suggest that sanctions have an impact on the share of household deposits of the directly sanctioned banks; however, the findings are opposite to the findings of the Russian banking sector as a whole. *Sanctions*Targeted bank* coefficient is negative and statistically significant for model (2) at 5% level and for model (3) at 10% level. This means that the share of household deposits of the directly targeted banks has decreased after the imposition of sanctions. Thus, the impact is opposite for the sanctioned banks in comparison to the Russian banking sector as whole, which has experienced an increase in the share of household deposits during sanctions. However, the findings in table 10 indicated that smaller banks rely more on household deposits. As the directly sanctioned banks are amongst the largest in Russia, the findings in table 12 are consistent in this sense. Large banks may not be as dependent on stable funding sources, such as household deposits, during economic downturns as smaller banks are. Also, it is possible that there has been a shift in households withdrawing their deposits from the directly sanctioned banks and placing them in smaller banks for safety purposes.

The table also shows that bank size and capitalisation are significantly and negatively related to household deposits at 1% level. Loans to assets is positively associated with household deposits at 1% significance level. These findings confirm the results in table 10. Both of the macroeconomic variables are negatively associated with the dependent variable at 1% significance level confirming that during economic downturns and crises banks rely more on stable sources of funding, such as household deposits. After including the control variables into to the regression the R-squared increases from 0% to 27% meaning that the models (2) and (3) are able to explain 27% of the variability. The F-statistic is extremely high and the p-value for the F-test highly significant meaning that the models have explanatory power.

Based on the findings in table 12, I reject hypothesis H3 regarding the directly targeted banks and conclude that Western economic sanctions have not increased the share of household deposits of the directly sanctioned banks. Instead, sanctions have decreased their share significantly, which is on the contrary to the hypothesis of this study.

Table 12. Differences-in-differences results for household deposits.

Table 12 presents the results of applying the differences-in-differences regression method to household deposits. Household deposits are defined as the ratio of household deposits to total deposits. Model (1) presents the method without control variables. Model (2) presents the corresponding method with control variables and the macroeconomic variable *Oil price*. Model (3) presents the method with control variables and the *Economic growth* macroeconomic control variable. *Sanctions*Targeted bank* coefficient is a combination of the dummy variables *Sanctions* and *Targeted bank* capturing the effect of the directly sanctioned Russian banks. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
C	0.286 ***	0.454 ***	0.427 ***
	(0.001)	(0.014)	(0.012)
Sanctions	0.032 ***	0.023 ***	0.023 ***
	(0.002)	(0.003)	(0.003)
Targeted bank	-0.029 *	-0.075 ***	-0.075 ***
	(0.016)	(0.016)	(0.016)
Sanctions*Targeted bank	-0.034	-0.043 **	-0.043 *
	(0.023)	(0.021)	(0.021)
Ln assets		-0.008 ***	-0.008 ***
		(0.001)	(0.001)
Loans to assets		0.214 ***	0.214 ***
		(0.004)	(0.004)
Capitalisation		-0.641 ***	-0.641 ***
		(0.008)	(0.008)
Oil price		-0.000 ***	
		(0.000)	
Economic growth			-0.232 ***
			(0.065)
Bank fixed effects	Yes	Yes	Yes
Observations	62,262	62,246	62,246
R-squared	0.00	0.27	0.27
F-statistic	89.96	2588.81	2585.74
Prob(F-statistic)	0.00	0.00	0.00

Table 13 presents the findings for the differences-in-differences method in examining the impact of Western economic sanctions on the funding structure of the directly sanctioned Russian banks, by examining corporate deposits as the dependent variable. The same specifications apply here as in previous tables for the differences-in-differences method. The results suggest that sanctions have an impact on the share of corporate deposits of the directly sanctioned banks; however, the findings are again opposite to the findings of the Russian banking sector as a whole. *Sanctions*Targeted bank* coefficient is positive and statistically significant at 1% level for models (1) and (3) and at 5% level for model (2). This indicates that the share of corporate deposits of the directly targeted banks has increased significantly after the imposition of sanctions. The results are opposite in comparison to the Russian banking sector as a whole, which has experienced a decrease in the share of corporate deposits during sanctions. A reason behind this could be that the directly targeted banks attract deposits from corporations despite being subject to sanctions, due to their size and for being state-controlled. In the Russian financial crisis in 1998 for instance, the banking sector experienced a deposit flight to the state-controlled banks, for state guarantee purposes (Fungáčová et al. 2010). Historically, the state-controlled banks have attracted deposits, as their ownership structure has guaranteed them not from going bankrupt. The increase in corporate deposits of the directly sanctioned banks can be a result of seeing the banks as being "too big to fail" when corporations are looking for safe places for their deposits.

The table also shows that bank size; loans to assets and capitalisation are negatively and significantly associated with corporate deposits at 1% level. These findings are in line with the results in table 10; suggesting that smaller banks that are less capitalised and have more loans outstanding, accumulate more corporate deposits. The macroeconomic variables are also positive with oil price at 5% significance level and economic growth at 1% level. These findings support the findings in table 10 that corporate deposits are being used more during economic upturns and when oil prices are rising. After including the control variables into the regression model the R-squared increases from 2% to 11% meaning that the models (2) and (3) are able to explain 11% of the variability. Nevertheless, the F-statistics are high and the p-values for the F-test highly significant meaning that the models have explanatory power.

Based on the evidence in table 13, I reject hypothesis H4 for the directly sanctioned banks and conclude that Western economic sanctions have not decreased the share of corporate deposits of the directly sanctioned Russian banks. Instead, the results show

that the share of corporate deposits of the targeted banks has increased during sanctions, which is the opposite to the hypothesis of this study.

Table 13. Differences-in-differences results for corporate deposits.

Table 13 presents the results of applying the differences-in-differences regression method to corporate deposits. Corporate deposits are defined as the ratio of corporate deposits to total deposits. Model (1) presents the method without control variables. Model (2) presents the corresponding method with control variables and the macroeconomic variable *Oil price*. Model (3) presents the method with control variables and the *Economic growth* macroeconomic control variable. *Sanctions*Targeted bank* coefficient is a combination of the dummy variables *Sanctions* and *Targeted bank* capturing the effect of the directly sanctioned Russian banks. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)	
C	0.344	***	0.831	***	0.827	***
	(0.001)		(0.012)		(0.010)	
Sanctions	0.053	***	-0.036	***	-0.025	***
	(0.002)		(0.003)		(0.003)	
Targeted bank	0.001		0.127	***	0.127	***
	(0.009)		(0.010)		(0.010)	
Sanctions*Targeted bank	0.089	***	0.088	**	0.088	***
	(0.016)		(0.014)		(0.015)	
Ln assets			-0.024	***	-0.023	***
			(0.001)		(0.001)	
Loans to assets			-0.088	***	-0.087	***
			(0.004)		(0.004)	
Capitalisation			-0.364	***	-0.364	***
			(0.006)		(0.006)	
Oil price			0.000	**		
			(0.000)			
Economic growth					0.396	***
					(0.057)	
Bank fixed effects	Yes		Yes		Yes	
Observations	62,262		62,246		62,246	
R-squared	0.02		0.11		0.11	
F-statistic	370.80		790.95		808.10	
Prob(F-statistic)	0.00		0.00		0.00	

Table 14 presents the findings for the differences-in-differences method in examining the impact of Western economic sanctions on the funding structure of the directly sanctioned Russian banks, by examining debt ratio as the dependent variable. The same specifications apply here as in previous tables for the differences-in-differences method. The results suggest that sanctions do not have an impact on the share of corporate deposits of the directly sanctioned banks. *Sanctions*Targeted bank* coefficient is negative, however, the results are insignificant for all three models. The results are particularly surprising as part of the Western sanctions were put into place to reduce debt financing for the directly sanctioned banks. The reasons behind this could be that the directly sanctioned banks have the advantage as large banks to seek debt financing from other sources. Another reason behind this could be the aid from the central bank to help Russian banks and corporations refinance their debt (Farchy 2014).

Based on the table, bank size, oil price and economic growth are positively and significantly associated with debt ratio at 1% level. This means that larger banks use more debt as a funding source than smaller banks. Furthermore, banks rely more on debt during economic booms and when oil prices are souring. These findings are line with ones recorded in table 12. Loans to assets is negatively related to the debt ratio at 1% level, which supports the findings in table 12 that banks, which have fewer loans outstanding rely more on debt financing. Capitalisation is negative and significant, which is the opposite in comparison to the findings from the panel fixed effects method. Here, the findings suggest that banks that are less capitalised have higher debt ratios. After including the control variables into the regression model the R-squared increases from 3% to 10% meaning that the models (2) and (3) are able to explain 10% of the variability. However, the F-statistics are considerably high and the p-values for the F-test highly significant meaning that the models have explanatory power.

Based on results in table 14, I reject hypothesis H5 for the directly sanctions banks and conclude that Western economic sanctions have not had a significant negative impact on the debt financing of the directly sanctioned Russian banks.

To summarize the empirical findings presented in this chapter, I conclude that sanctions against Russia have had a significant impact on the Russian banking sector as a whole in terms of increasing the riskiness of the banking sector and by having an impact on the funding structure of Russian banks. Surprisingly, however, the results are not as robust for the directly sanctioned banks and in regards the funding sources, the results are opposite to the results of the Russian banking sector as a whole.

Table 14. Differences-in-differences results for debt ratio.

Table 14 presents the results of applying the differences-in-differences regression method to the debt ratio. Debt ratio is defined as the ratio of total liabilities to total assets. Model (1) presents the method without control variables. Model (2) presents the corresponding method with control variables and the macroeconomic variable *Oil price*. Model (3) presents the method with control variables and the *Economic growth* macroeconomic control variable. *Sanctions*Targeted bank* coefficient is a combination of the dummy variables *Sanctions* and *Targeted bank* capturing the effect of the directly sanctioned Russian banks. Robust standard errors for the estimates are presented in parentheses. ***, ** and * indicate statistically significant results at 1%, 5%, and 10% levels, respectively.

	(1)		(2)		(3)	
C	0.943	***	0.958	***	0.979	***
	(0.000)		(0.004)		(0.003)	
Sanctions	-0.024	***	-0.012	***	-0.016	***
	(0.001)		(0.001)		(0.001)	
Targeted bank	-0.003		0.002		0.002	
	(0.002)		(0.002)		(0.002)	
Sanctions*Targeted bank	0.001		-0.000		-0.001	
	(0.006)		(0.006)		(0.006)	
Ln assets			0.001	***	0.001	***
			(0.000)		(0.000)	
Loans to assets			-0.079	***	-0.079	***
			(0.001)		(0.001)	
Capitalisation			-0.016	***	-0.017	***
			(0.002)		(0.002)	
Oil price			0.000	***		
			(0.000)			
Economic growth					0.156	***
					(0.019)	
Bank fixed effects	Yes		Yes		Yes	
Observations	62,262		62,246		62,246	
R-squared	0.03		0.10		0.10	
F-statistic	525.84		897.74		888.63	
Prob(F-statistic)	0.00		0.00		0.00	

7. CONCLUSIONS

The purpose of this study was to examine the impact of Western economic sanctions against Russia and how sanctions have impacted the riskiness and the funding structure of the Russian banking sector. This was examined by applying the panel fixed effects method and the differences-in-differences method in the empirical analysis. Bank risk was analysed in terms of the quality of the loan portfolios and capitalisation of Russian banks. Funding structure was examined with respect to the sources of funding and debt financing. The data consisted of micro-level balance sheet data on Russian banks and the research period ranged from January 2011 to December 2016 comprising of a period before sanctions and during sanctions.

The empirical findings of this study show that sanctions against Russia have a significant impact on the riskiness of the Russian banking sector. After the imposition of Western economic sanctions, the share of overdue loans of Russian banks has increased significantly deteriorating the quality of their loan portfolios. The findings also support the conception that during economic downturns and crises, the quality of the loan portfolios of banks deteriorates. Back in 2016 for instance, the International Monetary Fund IMF (2016) expressed its concern over the considerable uncertainty over the quality and the strength of the loan portfolios of Russian banks. I record that sanctions also increased the capitalisation of Russian banks, which can be viewed as a result of banks increasing their share of risky assets in the need for capital to cover for possible losses.

Furthermore, the findings show that Western economic sanctions have a significant impact on the funding structure of the Russian banking sector, in terms of funding sources and debt financing. After the imposition of sanctions, there has been a significant shift in the funding sources of Russian banks from corporate deposits to household deposits. This may be due to the uncertainty caused by sanctions and their negative impact on the Russian economy, which has made Russian banks adjust their funding sources towards more stable sources. In addition, after the imposition of sanctions the funds of the Russian corporate sector have been widely used to ensure growth in industrial production, which is another reason why their volume as deposits have decreased (Bank of Russia 2016). I also record that after the imposition of sanctions, the debt financing of Russian banks has decreased significantly.

Surprisingly, however, the results are not as robust for the directly sanctioned banks as they are on the Russian banking sector as a whole. Based on the findings of this study, sanctions do not have a significant impact on the riskiness of the directly sanctioned banks. After the imposition of sanctions, the share of overdue loans and capitalisation of the directly targeted banks has increased, however, the evidence is weak. The reason behind this could be that because these banks are amongst the largest in Russia, they may not be as severely affected by sanctions due to the advantages of diversification across regions, industries and businesses (Ip 2016).

In terms of bank funding structure, I find that the share of corporate deposits of the directly sanctioned banks has increased significantly, while the share of household deposits has decreased. The findings are opposite to the findings of the Russian banking sector as a whole. A reason behind this could be that the directly sanctioned banks attract deposits from corporations, despite being subject to sanctions due to their state-ownership and the view of being "too big to fail". Households on the other hand may have withdrawn their deposits from the directly sanctioned banks for safety purposes. Finally, I record that sanctions do not have a significant negative impact on the debt financing of the directly sanctioned banks. A reason behind this could be that the directly sanctioned banks have the advantage as large banks to seek debt financing from other sources.

The key motivation behind this study was to shed light on the impact of Western economic sanctions on the Russian banking sector. Four years into their imposition, sanctions are still in place and the conflict in Ukraine is as far from being solved as ever with new sanctions been imposed against Russia for its "malign" activities around the globe as described by the US Department of State (2018b). As the findings show, sanctions have had a significant impact on the riskiness and the funding structure of the Russian banking sector as a whole. Surprisingly, however, the impact has not been as strong for the directly sanctioned banks. The findings are surprising to say the least, as one would expect that the directly targeted banks would be the ones most severely affected. This naturally raises questions. Why did sanctions not have a significant impact on the directly sanctioned banks? Have the directly sanctioned banks been able to find substitutes or have the sanctions been too soft? I refer these to further research.

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